

Diatom zones (NPD)

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19D-3H-CC

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/10

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. *nodus*
Actinocyclus ingens* f. *planus
Actinocyclus ocellatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenicus
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentricula ikebei
Crucidentricula kanayae
Crucidentricula nicobarica
Crucidentricula paranicobarica
Crucidentricula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinatis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolikus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocana
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kolzumii
Neodenticula seminiae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isoponica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Sutirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamica
Thalassiosira medicaconvexa
Thalassiosira minutissima
Thalassiosira miocenicus
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancellatae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaoniensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

***Chaetoceros* Resting Spores**
TOTAL of VEGETATIVE CELLS

Araguene

Diatom zones (NPD)

undet.
 TOTAL PRESERVATION
 G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19.D 5H2w100
 TOTAL ABUNDANCE:
 M (>60%), A (20-60%), C (5-20%)
 F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/ 19

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
 F (>1 vlv/10FOVs & <1 vlv/10FOVs)
 R (>3 vlv/traverse & <1 vlv/10FOVs)
 X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinocyclus senarius
Actinocyclus vulgaris
Actinocyclus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenic
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coccinodiscus asteromphalus
Coccinodiscus marginatus
Coccinodiscus oculus-iridis
Coccinodiscus radiatus
Coccinodiscus rhombicus
Coccinodiscus symbolophorus
Cosmiolodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischabensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha var. *dimorpha*
Denticulopsis dimorpha var. *areolata*
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis laeta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelaeta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilaropsis cylindrus
Fragilaropsis dolotus
Fragilaropsis fossilis
Fragilaropsis oceanica
Fragilaropsis pilocena
Fragilaropsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikabea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kolzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kantschatica
Neodenticula kolzumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
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Pseudotriceratium radiosoreticulatum
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Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillarum
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Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
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Thalassionema pseudonitzschioides
Thalassionema schraderei
Thalassionema spp.
Thalassiosira antiqua
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Thalassiosira temporei
Thalassiosira umaensis
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Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
 TOTAL of VEGETATIVE CELLS

silico -
 foram -
 sponge = IF

Diatom zones (NPD)

Under

Core, section, interval (cm)

U14 19. D 5H4W/00

DATE: 2013/July/ 18

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

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Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopterychus senarius
Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
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Asteromphalus darwini
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Azpeitia vetustissima
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Thalassiosira minutissima
Thalassiosira miocenicus
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperi
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Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

sponge F

Diatom zones (NPD)

B

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 (9D-5A-CC)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vives/FOV)
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X (present), B (barren)

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Achnanthes lanceolata
Achnanthes lineariformis
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Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
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Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligogenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
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Cavitatus linearis
Cavitatus miocenicus
Cavitatus reclus
Cavitatus spp.
Cestodiscus kugleri
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Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
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Coscinodiscus oculus-iridis
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Coscinodiscus rhombicus
Coscinodiscus symbolophorus
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Crucidenticula ikebei
Crucidenticula kanayae
Crucidenticula nicobarica
Crucidenticula paranicobarica
Crucidenticula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis laeta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kotzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamschatca
Neodenticula koizumii
Neodenticula seminiae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praearboi
Pseudodimmergramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semipalis*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeeustrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Suriella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamicca
Thalassiosira mediacconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

Joram

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19D-8H-1, 77-82 cm bottom

DATE: 2013/July/14

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION G (good), M (moderate), P (poor)

TOTAL ABUNDANCE M (>60%), A (20-60%), C (5-20%) F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV) F (>1 vlv/10FOVs & <1 vlv/10FOVs) R (>3 vlv/traverse & <1 vlv/10FOVs) X (present), B (barren)

- Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligogenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azepeitia biradiata
Azepeitia komurae
Azepeitia nodulifera
Azepeitia oligocenica
Azepeitia praenodulifera
Azepeitia salisburyana
Azepeitia tabularis
Azepeitia vetustissima
Azepeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

- Denticulopsis crassa
Denticulopsis dimorpha var. dimorpha
Denticulopsis dimorpha var. areolata
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. minor
Denticulopsis praedimorpha var. praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturata
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. minor
Eunotia praerupta var. praerupta
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilaropsis cylindrus
Fragilaropsis dolipus
Fragilaropsis fossilis
Fragilaropsis oceanica
Fragilaropsis pilocana
Fragilaropsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kolzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamschatka
Neodenticula kolzumii
Neodenticula seminiae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praearboi
Pseudodimmergramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabelinae

- Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. hiemalis
Rhizosolenia hebetata f. semispina
Rhizosolenia norvegica
Rhizosolenia praeborgii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeeostrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. incurvatum
Thalassionema nitzschioides var. inflatum
Thalassionema nitzschioides var. parvum
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenicica
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temporei
Thalassiosira umaoiensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Dinos 1.5 2.5 2/32

Chaetoceros Resting Spores TOTAL of VEGETATIVE CELLS 100

Diatom zones (NPD)

Uhdet.
 TOTAL PRESERVATION
 G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19.D. 9H 20 100
 TOTAL ABUNDANCE
 M (>60%), A (20-60%), C (5-20%)
 F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/ 18

OBSERVER'S NAME AF (SK) IS

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV)
 F (>1 vlv/10FOVs & <1 vlv/10FOVs)
 R (>3 vlv/traverse & <1 vlv/10FOVs)
 X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
***Actinocyclus ingens* 1. nodus**
***Actinocyclus ingens* 1. planus**
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonseni
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonseni
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocana
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikobea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kozumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barbol
Proboscia curvirostris
Proboscia interposita
Proboscia praearbol
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabelinae

Rhaphoneis amphiceris
Rhaphoneis spp.
Rhizosolenia hebetata 1. *hiemalis*
Rhizosolenia hebetata 1. *semispina*
Rhizosolenia norwegica
Rhizosolenia praerbergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praelinitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praesoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praepraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temporei
Thalassiosira umaoniensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

***Chaetoceros* Resting Spores**
 TOTAL of VEGETATIVE CELLS

closed copart

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19.D 9/49w/00

DATE: 2013/July/ 18

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopteryx senarius
Actinopteryx vulgaris
Actinopteryx spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocentrica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmiodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dololus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kolzumia tatsunokuchlensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kantschatica
Neodenticula kolzumii
Neodenticula solinae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabellinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeoestrupii
Shionodiscus trifidus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira medicaconvexa
Thalassiosira minutissima
Thalassiosira miocenicata
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temporei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

Undet

Core, section, interval (cm)

U14 19D-9H-CC

DATE: 2013/July/12

OBSERVER's NAME (AF) SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), X (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopterychus senarius
Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocena
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculatus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidenticula ikebei
Crucidenticula kanayae
Crucidenticula nicobarica
Crucidenticula paranicobarica
Crucidenticula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinatis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolotus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella canina
Kisseleviella ezoensis
Kozumia tatsunokuchlensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kozumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmergrana elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoidea
Rouxia obesa
Shionodiscus oestrupii F 3
Shionodiscus praesoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamca
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocena
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancellae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores 0

TOTAL of VEGETATIVE CELLS 4

Stram fraguens

(GA)
オスカリテ-夕を信じる。

Diatom zones (NPD)

undet

Core, section, interval (cm)

U14 19D 10H-4W 100cm

DATE: 2013/July/ 14

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

全面見下

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica*
- Achnanthes inflata*
- Achnanthes lanceolata*
- Achnanthes lineariformis*
- Achnanthes* spp.
- Actinocyclus curvatus*
- Actinocyclus ellipticus*
- Actinocyclus ingens***
- Actinocyclus ingens f. nodus***
- Actinocyclus ingens f. planus***
- Actinocyclus oculatus***
- Actinocyclus ochotensis*
- Actinocyclus octonarius*
- Actinocyclus robustus*
- Actinocyclus tsugaruensis*
- Actinocyclus* spp.
- Actinopterychus senarius*
- Actinopterychus vulgaris*
- Actinopterychus* spp.
- Araniscus lewisianus*
- Araniscus* spp.
- Asteromphalus darwini*
- Asteromphalus oligocenicus*
- Asteromphalus parvulus*
- Asteromphalus robustus*
- Asteromphalus* spp.
- Azpeitia biradiata*
- Azpeitia komurae***
- Azpeitia nodulifera*
- Azpeitia oligocenica*
- Azpeitia praenodulifera*
- Azpeitia salisburyana*
- Azpeitia tabularis*
- Azpeitia vetustissima*
- Azpeitia* spp.
- Bacterosira bathyomphala*
- Bacterosira fragilis*
- Bacterosira* spp.
- Cavitatus exiguus*
- Cavitatus jouseanus***
- Cavitatus lanceolatus*
- Cavitatus linearis*
- Cavitatus miocenicus*
- Cavitatus rectus*
- Cavitatus* spp.
- Cestodiscus kugleri*
- Cestodiscus trochus*
- Cestodiscus* spp.
- Cocconeis californica*
- Cocconeis costata*
- Cocconeis scutellum*
- Cocconeis* spp.
- Coscinodiscus asteromphalus*
- Coscinodiscus marginatus*
- Coscinodiscus oculus-iridis*
- Coscinodiscus radiatus*
- Coscinodiscus rhombicus*
- Coscinodiscus symbolophorus*
- Cosmidiscus insignis***
- Crucidenticula ikebei*
- Crucidenticula kanayae*
- Crucidenticula nicobarica*
- Crucidenticula paranicobarica*
- Crucidenticula sawamurae*
- Cyclotella striata*
- Cyclotella meneghiniana*
- Cyclotella* spp.
- Cymbella cistula*
- Cymbella minuta*
- Cymbella subaequalis*
- Cymbella* spp.
- Delphineis angustata*
- Delphineis ischaboensis*
- Delphineis kippae*
- Delphineis sachalinensis*
- Delphineis simonsenii***
- Delphineis sunirella*
- Delphineis* spp.

- Denticulopsis crassa***
- Denticulopsis dimorpha* var. *dimorpha***
- Denticulopsis dimorpha* var. *areolata***
- Denticulopsis hustedii***
- Denticulopsis hyalina***
- Denticulopsis katayamae***
- Denticulopsis laeta***
- Denticulopsis praedimorpha* var. *minor***
- Denticulopsis praedimorpha* var. *praedimorpha***
- Denticulopsis praehyalina***
- Denticulopsis praekatayamae***
- Denticulopsis praelaeta***
- Denticulopsis simonsenii***
- Denticulopsis tanimurae***
- Denticulopsis vulgaris***
- Denticulopsis* spp.
- Diploneis bombus*
- Diploneis puella*
- Diploneis smithii*
- Diploneis suborbicularis*
- Diploneis* spp.
- Distephanosira architecturata*
- Distephanosira* spp.
- Ellerbeckia sol*
- Ellerbeckia* spp.
- Eunotia pectinalis* var. *minor*
- Eunotia praerupta* var. *praerupta*
- Eunotia* spp.
- Fragilaria construens*
- Fragilaria* spp.
- Fragilariopsis cylindrus*
- Fragilariopsis dolius***
- Fragilariopsis fossilis***
- Fragilariopsis oceanica*
- Fragilariopsis plocana***
- Fragilariopsis* spp.
- Goniothecium decoratum*
- Goniothecium rogersii*
- Goniothecium* spp.
- Grammatophora* spp.
- Halamphora costata*
- Hyalodiscus obsoletus*
- Hyalodiscus* spp.
- Ikebea tenuis***
- Kisseleviella carina*
- Kisseleviella ezoensis*
- Kotzumia tatsunokuchiensis***
- Kozloviella minor*
- Lisitzinia ornata*
- Mediaria magna***
- Mediaria splendida***
- Melosira albicans*
- Navicula elginensis*
- Navicula lyroides*
- Navicula menisculus*
- Navicula salinarum*
- Neodenticula kamtschatica***
- Neodenticula kolzumii***
- Neodenticula seminae***
- Nitzschia challengerii*
- Nitzschia jouseae***
- Nitzschia palea*
- Nitzschia reinholdii***
- Nitzschia rolandii***
- Odontella aurita*
- Odontella* spp.
- Paralia sulcata*
- Paralia* spp.
- Podosira stelligera*
- Porosira glacialis*
- Proboscia barbol***
- Proboscia curvirostris***
- Proboscia interposita*
- Proboscia praeparbol*
- Pseudodimmerogramma elegans*
- Pseudonitzschia senata*
- Pseudopyxilla americana*
- Pseudotracerium radiosoreticulatum*
- Pyxidicula zabelinae***

- Rhaphoneis amphicerus*
- Rhaphoneis* spp.
- Rhizosolenia hebetata* f. *hiemalis*
- Rhizosolenia hebetata* f. *semispina*
- Rhizosolenia norvegica*
- Rhizosolenia praeborgii***
- Rhizosolenia setigera*
- Rhizosolenia* spp.
- Roperia tessellata*
- Rocella gelida*
- Rocella praenitida*
- Rocella semigelida*
- Rocella vigilans*
- Rouxia californica***
- Rouxia granda*
- Rouxia isopolica*
- Rouxia naviculoides*
- Rouxia obesa*
- Shionodiscus oestrupii*** IF
- Shionodiscus praeoestrupii*** IF
- Shionodiscus trifolius* IF
- Stephanopyxis dimorpha*
- Stephanopyxis horridus***
- Stephanopyxis turris*
- Stephanopyxis* spp. IF
- Sunirella* spp.
- Thalassionema bacillaris*
- Thalassionema nitzschioides*
- Thalassionema nitzschioides* var. *incurvatum*
- Thalassionema nitzschioides* var. *inflatum*
- Thalassionema nitzschioides* var. *parvum*
- Thalassionema pseudonitzschioides*
- Thalassionema schraderi***
- Thalassionema* spp.
- Thalassiosira antiqua***
- Thalassiosira bioculata*
- Thalassiosira castanea***
- Thalassiosira convexa***
- Thalassiosira decipiens*
- Thalassiosira dubiosa*
- Thalassiosira eccentrica*** F
- Thalassiosira fasciculata*
- Thalassiosira fraga*
- Thalassiosira gravida*** IF
- Thalassiosira grunowii***
- Thalassiosira hyalina*
- Thalassiosira irregulara*
- Thalassiosira jacksonii***
- Thalassiosira jouseae***
- Thalassiosira leptopus*
- Thalassiosira lineata*
- Thalassiosira lusca*
- Thalassiosira manifesta*
- Thalassiosira marjamica***
- Thalassiosira mediaconvexa*
- Thalassiosira minutissima***
- Thalassiosira miocenica*
- Thalassiosira nordenskioldii*
- Thalassiosira orientalis*
- Thalassiosira praefraga*
- Thalassiosira praenidulus*
- Thalassiosira praeyabei*
- Thalassiosira robusta*
- Thalassiosira sancellatae*
- Thalassiosira singularis***
- Thalassiosira temperei***
- Thalassiosira umaoiensis*
- Thalassiosira undulosa*
- Thalassiosira yabei***
- Thalassiosira* spp. T
- Thalassiothrix longissima*
- Thalassiothrix* spp.
- Trachyneis aspera*
- Trachyneis* spp.
- Yoshidaia divergens*
- Yoshidaia* spp.

R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
R29
R30

Chaetoceros Resting Spores F
TOTAL of VEGETATIVE CELLS

30

Dino
closed copy

Diatom zones (NPD)

Core, section, interval (cm)

DATE: 2013/July

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopychus senarius
Actinopychus vulgaris
Actinopychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocena
Azpeitia praenodulifera
Azpeitia saisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseaui
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmioliscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonseni
Delphineis sunirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha var. *dimorpha*
Denticulopsis dimorpha var. *areolata*
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelaeta
Denticulopsis simonseni
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolotus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kozumii
Neodenticula saminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
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Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabelinae

Rhaphoneis amphiceros
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semipina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopatica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horrkus
Stephanopyxis turris
Stephanopyxis spp.
Sunirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocena
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira tempoeri
Thalassiosira umaicensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

undet
 TOTAL PRESERVATION
 G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19 D - 14 H - 3 W 29 cm

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
 F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/ 14

OBSERVER's NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
 F (>1 vlv/10FOVs & <1 vlv/10FOVs)
 R (>3 vlv/traverse & <1 vlv/10FOVs)
 X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. *nodus*
Actinocyclus ingens f. *planus*
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus oclonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocena
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculis-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischbaensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonseni
Delphineis surella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha var. *dimorpha*
Denticulopsis dimorpha var. *areolata*
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonseni
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plicata
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikoba tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozioviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kozumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praeboroi
Pseudodimmerograma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praelinitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Suirella spp.
Thalassionema bacillarum
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamicca
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocena
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperlei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachymeis aspera
Trachymeis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
 TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

NPD 122

Core, section, interval (cm)

U14 19 D 14H-4W, 100cm

DATE: 2013/July 14

OBSERVER'S NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%) B (no diatoms)

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinocyclus senarius
Actinocyclus vulgaris
Actinocyclus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocena
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentula ikebei
Crucidentula kanayae
Crucidentula nicobarica
Crucidentula parnicobarica
Crucidentula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehtyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragiliopsis cylindrus
Fragiliopsis dololus
Fragiliopsis fossilis
Fragiliopsis oceanica
Fragiliopsis pilocana
Fragiliopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ozoensis
Koizumia tatsunokuchlensis
Koizumiella minor
Lisztinia ornata
Medleria magna
Medleria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula koizumii
Neodenticula seminiae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmergramma elegans
Pseudonitzschia senata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. hiemalis
Rhizosolenia hebetata f. semispina
Rhizosolenia norvegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocena
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenitida
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperlei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

***Chesteroceros* Resting Spores**

TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

U14 det

Core, section, interval (cm)

U14 19. D. 14 Hcc

DATE: 2013/July 13

OBSERVER'S NAME AF (SK) IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/10FOVs & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinocyclus senarius
Actinocyclus vulgaris
Actinocyclus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocena
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmidiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischabensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dololus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikobea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kolzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kolzumii
Neodenticula saminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praearboi
Pseudodimmergramma elegans
Pseudonitzschia seniata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabellinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis lurrei
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocena
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira cancellatae
Thalassiosira singularis
Thalassiosira temporei
Thalassiosira umaoniensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

sponge T

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19D 15H-2W, 37 cm

DATE: 2013/July/ 18

OBSERVER's NAME AF SK (IS)

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica*
- Achnanthes inflata*
- Achnanthes lanceolata*
- Achnanthes lineariformis*
- Achnanthes* spp.
- Actinocyclus curvatus*
- Actinocyclus ellipticus*
- Actinocyclus ingens*
- Actinocyclus ingens f. nodus*
- Actinocyclus ingens f. planus*
- Actinocyclus oculatus*
- Actinocyclus ochotensis*
- Actinocyclus octonarius*
- Actinocyclus robustus*
- Actinocyclus tsugaruensis*
- Actinocyclus* spp.
- Actinopterychus senarius*
- Actinopterychus vulgaris*
- Actinopterychus* spp.
- Araniscus lewisianus*
- Araniscus* spp.
- Asteromphalus darwinii*
- Asteromphalus oligocenicus*
- Asteromphalus parvulus*
- Asteromphalus robustus*
- Asteromphalus* spp.
- Azpeitia biradiata*
- Azpeitia komurae*
- Azpeitia nodulifera*
- Azpeitia oligocenic*
- Azpeitia praenodulifera*
- Azpeitia salisburyana*
- Azpeitia tabularis*
- Azpeitia vetustissima*
- Azpeitia* spp.
- Bacterosira bathyomphala*
- Bacterosira fragilis*
- Bacterosira* spp.
- Cavitatus exiguus*
- Cavitatus jouseanus*
- Cavitatus lanceolatus*
- Cavitatus linearis*
- Cavitatus miocenicus*
- Cavitatus rectus*
- Cavitatus* spp.
- Cestodiscus kugleri*
- Cestodiscus trochus*
- Cestodiscus* spp.
- Cocconeis californica*
- Cocconeis costata*
- Cocconeis scutellum*
- Cocconeis* spp.
- Coscinodiscus asteromphalus*
- Coscinodiscus marginatus*
- Coscinodiscus oculus-tridis*
- Coscinodiscus radiatus*
- Coscinodiscus rhombicus*
- Coscinodiscus symbolophorus*
- Cosmodiscus insignis*
- Crucidenticula ikebei*
- Crucidenticula kanayae*
- Crucidenticula nicobarica*
- Crucidenticula paranicobarica*
- Crucidenticula sawamurae*
- Cyclotella striata*
- Cyclotella meneghiniana*
- Cyclotella* spp.
- Cymbella cistula*
- Cymbella minuta*
- Cymbella subaequalis*
- Cymbella* spp.
- Delphineis angustata*
- Delphineis ischaboensis*
- Delphineis kippae*
- Delphineis sachalinensis*
- Delphineis simonsenii*
- Delphineis surirella*
- Delphineis* spp.

- Denticulopsis crassa*
- Denticulopsis dimorpha* var. *dimorpha*
- Denticulopsis dimorpha* var. *areolata*
- Denticulopsis hustedtii*
- Denticulopsis hyalina*
- Denticulopsis katayamae*
- Denticulopsis lauta*
- Denticulopsis praedimorpha* var. *minor*
- Denticulopsis praedimorpha* var. *praedimorpha*
- Denticulopsis praehyalina*
- Denticulopsis praekatayamae*
- Denticulopsis praelauta*
- Denticulopsis simonsenii*
- Denticulopsis tanimurae*
- Denticulopsis vulgaris*
- Denticulopsis* spp.
- Diploneis bombus*
- Diploneis puella*
- Diploneis smithii*
- Diploneis suborbicularis*
- Diploneis* spp.
- Distephanosira architecturalis*
- Distephanosira* spp.
- Ellerbeckia sol*
- Ellerbeckia* spp.
- Eunotia pectinalis* var. *minor*
- Eunotia praerupta* var. *praerupta*
- Eunotia* spp.
- Fragilaria construens*
- Fragilaria* spp.
- Fragilariopsis cylindrus*
- Fragilariopsis dololus*
- Fragilariopsis fossilis*
- Fragilariopsis oceanica*
- Fragilariopsis plocana*
- Fragilariopsis* spp.
- Goniothecium decoratum*
- Goniothecium rogersii*
- Goniothecium* spp.
- Grammatophora* spp.
- Halamphora costata*
- Hyalodiscus obsoletus*
- Hyalodiscus* spp.
- Ikebea tenuis*
- Kisseleviella carina*
- Kisseleviella ezoensis*
- Kozumia tatsunokuchiensis*
- Kozloviella minor*
- Lisitzinia ornata*
- Mediaria magna*
- Mediaria splendida*
- Melosira albicans*
- Navicula elginensis*
- Navicula lyroides*
- Navicula menisculus*
- Navicula salinarum*
- Neodenticula kantschatica*
- Neodenticula kozumii*
- Neodenticula seminiae*
- Nitzschia challengerii*
- Nitzschia jouseae*
- Nitzschia palea*
- Nitzschia reinholdii*
- Nitzschia rolandii*
- Odontella aurita*
- Odontella* spp.
- Paralia sulcata*
- Paralia* spp.
- Podosira stelligera*
- Porosira glacialis*
- Proboscia barboi*
- Proboscia curvirostris*
- Proboscia interposita*
- Proboscia praebarboi*
- Pseudodimmergramma elegans*
- Pseudonitzschia seriata*
- Pseudopyxilla americana*
- Pseudotriceratium radiosreticulatum*
- Pyxidicula zabelinae*

- Rhaphoneis amphicerus*
- Rhaphoneis* spp.
- Rhizosolenia hebetata* f. *hiemalis*
- Rhizosolenia hebetata* f. *semispina*
- Rhizosolenia norvegica*
- Rhizosolenia praebergonii*
- Rhizosolenia setigera*
- Rhizosolenia* spp.
- Roperia tessellata*
- Rocella gelida*
- Rocella praenitida*
- Rocella semigelida*
- Rocella vigilans*
- Rouxia californica*
- Rouxia granda*
- Rouxia isopolica*
- Rouxia naviculoides*
- Rouxia obesa*
- Shionodiscus oestrupii*
- Shionodiscus praecostrupii*
- Shionodiscus trifidulus*
- Stephanopyxis dimorpha*
- Stephanopyxis horridus*
- Stephanopyxis turris*
- Stephanopyxis* spp.
- Surirella* spp.
- Thalassionema bacillar*
- Thalassionema nitzschioides*
- Thalassionema nitzschioides* var. *incurvatum*
- Thalassionema nitzschioides* var. *inflatum*
- Thalassionema nitzschioides* var. *parvum*
- Thalassionema pseudonitzschioides*
- Thalassionema schraderi*
- Thalassionema* spp.
- Thalassiosira antiqua*
- Thalassiosira bioculata*
- Thalassiosira castanea*
- Thalassiosira convexa*
- Thalassiosira decipiens*
- Thalassiosira dubiosa*
- Thalassiosira eccentrica*
- Thalassiosira fasciculata*
- Thalassiosira fraga*
- Thalassiosira gravida*
- Thalassiosira grunowii*
- Thalassiosira hyalina*
- Thalassiosira irregulara*
- Thalassiosira jacksonii*
- Thalassiosira jouseae*
- Thalassiosira leptopus*
- Thalassiosira lineata*
- Thalassiosira lusca*
- Thalassiosira manifesta*
- Thalassiosira marujamca*
- Thalassiosira mediaconvexa*
- Thalassiosira minutissima*
- Thalassiosira miocenic*
- Thalassiosira nordenskioldii*
- Thalassiosira orientalis*
- Thalassiosira praefraga*
- Thalassiosira praenitidus*
- Thalassiosira praeyabei*
- Thalassiosira robusta*
- Thalassiosira sancettae*
- Thalassiosira singularis*
- Thalassiosira temporei*
- Thalassiosira umaeniensis*
- Thalassiosira undulosa*
- Thalassiosira yabei*
- Thalassiosira* spp.
- Thalassiothrix longissima*
- Thalassiothrix* spp.
- Trachyneis aspera*
- Trachyneis* spp.
- Yoshidaia divergens*
- Yoshidaia* spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

100

Dino silio

105/28 205/58 278/78
9.0 10.0 11.0 12.0

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19D-15H-3W 36cm

DATE: 2013/July/ 1x

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica
- Achnanthes inflata
- Achnanthes lanceolata
- Achnanthes lineariformis
- Achnanthes spp.
- Actinocyclus curvatulus
- Actinocyclus ellipticus
- Actinocyclus ingens
- Actinocyclus ingens 1. nodus
- Actinocyclus ingens 1. planus
- Actinocyclus oculatus
- Actinocyclus ochotensis
- Actinocyclus octonarius
- Actinocyclus robustus
- Actinocyclus tsugaruensis
- Actinocyclus spp.
- Actinoptychus senarius
- Actinoptychus vulgaris
- Actinoptychus spp.
- Araniscus lewisianus
- Araniscus spp.
- Asteromphalus darwinii
- Asteromphalus oligogenicus
- Asteromphalus parvulus
- Asteromphalus robustus
- Asteromphalus spp.
- Azpeitia biradiata
- Azpeitia komurae
- Azpeitia nodulifera
- Azpeitia oligocenica
- Azpeitia praenodulifera
- Azpeitia salisburyana
- Azpeitia tabularis
- Azpeitia vetustissima
- Azpeitia spp.
- Bacterosira bathyomphala
- Bacterosira fragilis
- Bacterosira spp.
- Cavitatus exiguus
- Cavitatus jouseanus
- Cavitatus lanceolatus
- Cavitatus linearis
- Cavitatus miocenicus
- Cavitatus rectus
- Cavitatus spp.
- Cestodiscus kugleri
- Cestodiscus trochus
- Cestodiscus spp.
- Cocconeis californica
- Cocconeis costata
- Cocconeis scutellum
- Cocconeis spp.
- Coscinodiscus asteromphalus
- Coscinodiscus marginatus
- Coscinodiscus oculus-iridis
- Coscinodiscus radiatus
- Coscinodiscus rhombicus
- Coscinodiscus symbolophorus
- Cosmodiscus insignis
- Crucidentacula ikebei
- Crucidentacula kanayae
- Crucidentacula nicobarica
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- Delphineis simonseni
- Delphineis surirella
- Delphineis spp.

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- Denticulopsis dimorpha var. dimorpha
- Denticulopsis dimorpha var. areolata
- Denticulopsis hustedii
- Denticulopsis hyalina
- Denticulopsis katayamae
- Denticulopsis lauta
- Denticulopsis praedimorpha var. minor
- Denticulopsis praedimorpha var. praedimorpha
- Denticulopsis praehyalina
- Denticulopsis praekatayamae
- Denticulopsis praelauta
- Denticulopsis simonseni
- Denticulopsis tanimurae
- Denticulopsis vulgaris
- Denticulopsis spp.
- Diploneis bombus
- Diploneis puella
- Diploneis smithii
- Diploneis suborbicularis
- Diploneis spp.
- Distephanosira architecturalis
- Distephanosira spp.
- Ellerbeckia sol
- Ellerbeckia spp.
- Eunotia pectinalis var. minor
- Eunotia praerupta var. praerupta
- Eunotia spp.
- Fragilaria construens
- Fragilaria spp.
- Fragilariopsis cylindrus
- Fragilariopsis dolius
- Fragilariopsis fossilis
- Fragilariopsis oceanica
- Fragilariopsis plocana
- Fragilariopsis spp.
- Goniothecium decoratum
- Goniothecium rogersii
- Goniothecium spp.
- Grammatophora spp.
- Halamphora costata
- Hyalodiscus obsoletus
- Hyalodiscus spp.
- Ikobea tenuis
- Kisseleviella canina
- Kisseleviella ozoensis
- Kotzumia tatsunokuchiensis
- Kozloviella minor
- Lisitzinia ornata
- Mediaria magna
- Mediaria splendida
- Melosira albicans
- Navicula elginensis
- Navicula lyroides
- Navicula menisculus
- Navicula salinarum
- Neodenticula kamtschatica
- Neodenticula koizumii
- Neodenticula seminae
- Nitzschia challengeri
- Nitzschia jouseae
- Nitzschia palea
- Nitzschia reinholdii
- Nitzschia rolandii
- Odontella aurita
- Odontella spp.
- Paralia sulcata
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- Porosira stelligera
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- Proboscia barboi
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- Pyxidicula zabelinae

- Rhaphoneis amphicerus
- Rhaphoneis spp.
- Rhizosolenia hebetata 1. hiemalis
- Rhizosolenia hebetata 1. semispina
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- Rhizosolenia setigera
- Rhizosolenia spp.
- Roperia tessellata
- Rocella gelida
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- Rocella semigelida
- Rocella vigilans
- Rouxia californica
- Rouxia granda
- Rouxia isopolica
- Rouxia naviculoides
- Rouxia obesa
- R1 Shionodiscus oestrupii
- R1 Shionodiscus praeoestrupii
- Shionodiscus trifolius
- Stephanopyxis dimorpha
- Stephanopyxis horridus
- R2 Stephanopyxis turris
- R2 Stephanopyxis spp.
- Surirella spp.
- Thalassionema bacillaris
- C26 Thalassionema nitzschioides
- Thalassionema nitzschioides var. incurvatum
- Thalassionema nitzschioides var. inflatum
- Thalassionema nitzschioides var. parvum
- Thalassionema pseudonitzschioides
- Thalassionema schradri
- Thalassionema spp.
- Thalassiosira antiqua
- Thalassiosira bioculata
- Thalassiosira castanea
- Thalassiosira convexa
- Thalassiosira decipiens
- Thalassiosira dubiosa
- Thalassiosira eccentrica
- Thalassiosira fasciculata
- Thalassiosira fraga
- R1 Thalassiosira gravida
- R2 Thalassiosira grunowii
- Thalassiosira hyalina
- Thalassiosira irregularis
- Thalassiosira jacksonii
- Thalassiosira jouseae
- Thalassiosira leptopus
- R1 Thalassiosira lineata
- Thalassiosira lusca
- Thalassiosira manifesta
- Thalassiosira marjameica
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- Thalassiosira minutissima
- Thalassiosira miocenica
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- Thalassiosira praefraga
- Thalassiosira praenidulus
- Thalassiosira praeyabei
- Thalassiosira robusta
- Thalassiosira sancettae
- Thalassiosira singularis
- Thalassiosira temperi
- Thalassiosira umaoiensis
- Thalassiosira undulosa
- Thalassiosira yabei
- Thalassiosira spp.
- Thalassiothrix longissima
- Thalassiothrix spp.
- Trachymeis aspera
- Trachymeis spp.
- Yoshidaia divergens
- Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

Silico Dino
closed 98/43 238/22
19.0 18.0 17.0

270/100

100

Diatom zones (NPD)

NPD13

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19.D, 15HC

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%), F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July 13

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

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Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
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Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
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Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligogenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
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Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
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Cavitatus linearis
Cavitatus miocenicus
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Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. minor
Eunotia praerupta var. praerupta
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolioles
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
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Melosira albicans
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Navicula salinarum
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Neodenticula koizumii
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Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
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Odontella spp.
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Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praeraboi
Pseudodimmergrana elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidicula zabelinae

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Rhaphoneis spp.
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Rhizosolenia hebetata f. semispina
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Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
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Shionodiscus praesoestrupii
Shionodiscus trifidulus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. incurvatum
Thalassionema nitzschioides var. inflatum
Thalassionema nitzschioides var. parvum
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamicia
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

closed copura +
foram -

silice = 7
sponge IT

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

100

551

Diatom zones (NPD)

BARREN

Core, section, interval (cm)

U14 19D-16H-1W 55 cm

DATE: 2013/July/14

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

FRAGMENT

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)

F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)

F (>1 vlv/10FOVs & <1 vlv/10FOVs)

R (>3 vlv/traverse & <1 vlv/10FOVs)

X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens 1. ***nodus***
Actinocyclus ingens 1. ***planus***
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus oclonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligogenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidenticula ikebei
Crucidenticula kanayae
Crucidenticula nicobarica
Crucidenticula paranicobarica
Crucidenticula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonseni
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonseni
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocana
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella canina
Kisseleviella ezoensis
Koizumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula mentisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula koizumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia senata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidicula zabelinae

Rhaphoneis amphiceris
Rhaphoneis spp.
Rhizosolenia hebetata 1. *hiemalis*
Rhizosolenia hebetata 1. *semispina*
Rhizosolenia norwegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperi
Thalassiosira umaoniensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachymeis aspera
Trachymeis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

NDD R

Core, section, interval (cm)

U14 19.D.16HCC

DATE: 2013/July/13

OBSERVER'S NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica
- Achnanthes inflata
- Achnanthes lanceolata
- Achnanthes lineariformis
- Achnanthes spp.
- Actinocyclus curvatus T 3
- Actinocyclus ellipticus
- Actinocyclus ingens
- Actinocyclus ingens f. nodus
- Actinocyclus ingens f. planus
- Actinocyclus oculatus
- Actinocyclus ochotensis
- Actinocyclus octonarius - 1
- Actinocyclus robustus
- Actinocyclus tsugaruensis
- Actinocyclus spp.
- Actinoptychus senarius
- Actinoptychus vulgaris
- Actinoptychus spp.
- Araniscus lewisianus
- Araniscus spp.
- Asteromphalus darwini
- Asteromphalus oligocenicus
- Asteromphalus parvulus
- Asteromphalus robustus
- Asteromphalus spp.
- Azpeitia biradiata
- Azpeitia komurae - 1
- Azpeitia nodulifera
- Azpeitia oligocentica
- Azpeitia praenodulifera
- Azpeitia salisburyana
- Azpeitia tabularis
- Azpeitia vetustissima
- Azpeitia spp.
- Bacterosira bathyomphala
- Bacterosira fragilis
- Bacterosira spp.
- Cavitatus exiguus
- Cavitatus jouseanus
- Cavitatus lanceolatus
- Cavitatus linearis
- Cavitatus miocenicus
- Cavitatus rectus
- Cavitatus spp.
- Castodiscus kugleri
- Castodiscus trochus
- Castodiscus spp.
- Cocconeis californica
- Cocconeis costata
- Cocconeis scutellum
- Cocconeis spp.
- Coscinodiscus asteromphalus
- Coscinodiscus marginatus
- Coscinodiscus oculus-iridis
- Coscinodiscus radiatus
- Coscinodiscus rhombicus
- Coscinodiscus symbolophorus
- Cosmidiscus insignis
- Crucidentacula ikebei
- Crucidentacula kanayae
- Crucidentacula nicobarica
- Crucidentacula paranicobarica
- Crucidentacula sawamurae
- Cyclotella striata
- Cyclotella meneghiniana
- Cyclotella spp.
- Cymbella cistula
- Cymbella minuta
- Cymbella subaequalis
- Cymbella spp.
- Delphineis angustata
- Delphineis ischaboensis
- Delphineis kippae
- Delphineis sachalinensis
- Delphineis simonsenii
- Delphineis surirella
- Delphineis spp.

- Denticulopsis crassa
- Denticulopsis dimorpha var. dimorpha
- Denticulopsis dimorpha var. areolata
- Denticulopsis hustedii
- Denticulopsis hyalina
- Denticulopsis katayamae
- Denticulopsis leuta
- Denticulopsis praedimorpha var. minor
- Denticulopsis praedimorpha var. praedimorpha
- Denticulopsis praehyalina
- Denticulopsis praekatayamae
- Denticulopsis praelauta
- Denticulopsis simonsenii
- Denticulopsis tanimurae
- Denticulopsis vulgaris
- Denticulopsis spp.
- Diploneis bombus
- Diploneis puella
- Diploneis smithii
- Diploneis suborbicularis
- Diploneis spp.
- Distephanosira architecturalis
- Distephanosira spp.
- Ellerbeckia sol
- Ellerbeckia spp.
- Eunotia pectinalis var. minor
- Eunotia praerupta var. praerupta
- Eunotia spp.
- Fragilaria construens
- Fragilaria spp.
- Fragilariopsis cylindrus
- Fragilariopsis dololus
- Fragilariopsis fossilis
- Fragilariopsis oceanica
- Fragilariopsis plocena
- Fragilariopsis spp.
- Goniothecium decoratum
- Goniothecium rogersii
- Goniothecium spp.
- Grammatophora spp.
- Halamphora costata
- Hyalodiscus obsotetus T 2
- Hyalodiscus spp.
- Ikebea tenuis
- Kisseleviella carina
- Kisseleviella ezoensis
- Kotzumia tatsunokuchiensis
- Kozloviella minor
- Lisitzinia ornata
- Medlaria magna
- Medlaria splendida
- Melosira albicans
- Navicula elginensis
- Navicula lyroides
- Navicula menisculus
- Navicula salinarum
- Neodenticula kamtschatica
- Neodenticula koizumii
- Neodenticula seminae T 13
- Nitzschia challengerii
- Nitzschia jouseae
- Nitzschia palea
- Nitzschia reinholdii
- Nitzschia rolandii
- Odontella aurita
- Odontella spp.
- Paralia sulcata T 39
- Paralia spp.
- Podosira stelligera
- Porosira glacialis
- Proboscia barbol
- Proboscia curvirostris
- Proboscia interposita
- Proboscia praearbol
- Pseudodimmergrana elegans
- Pseudonitzschia seriata
- Pseudopyxilla americana
- Pseudotracerarium radiosoreticulatum
- Pyxidula zabelinae

- Rhaphoneis amphicerus
- Rhaphoneis spp.
- Rhizosolenia hebetata f. hiemalis T 2
- Rhizosolenia hebetata f. semispina
- Rhizosolenia norvegica
- Rhizosolenia praeborgonii
- Rhizosolenia setigera
- Rhizosolenia spp.
- Roperia tessellata
- Rocella gelida
- Rocella praenitida
- Rocella semigelida
- Rocella vigilans
- Rouxia californica
- Rouxia granda
- Rouxia isopolica
- Rouxia naviculoides
- Rouxia obesa
- R Shionodiscus oestrupii - 1
- R Shionodiscus praeeostrupii
- R Shionodiscus trifolius T 5
- Stephanopyxis dimorpha
- Stephanopyxis horridus
- Stephanopyxis lurreis
- R Stephanopyxis spp. T 19
- R Surirella spp.
- R Thalassionema bacillaris
- R Thalassionema nitzschioides T 6
- Thalassionema nitzschioides var. incurvatum
- Thalassionema nitzschioides var. inflatum
- Thalassionema nitzschioides var. parvum
- Thalassionema pseudonitzschioides
- Thalassionema schraderi
- Thalassionema spp.
- Thalassiosira antiqua
- Thalassiosira bioculata
- Thalassiosira castanea
- Thalassiosira convexa
- Thalassiosira decipiens
- Thalassiosira dubiosa
- Thalassiosira eccentrica - 1
- Thalassiosira fasciculata
- Thalassiosira fraga
- R Thalassiosira gravida T 6
- Thalassiosira grunowii
- Thalassiosira hyalina
- Thalassiosira irregulara
- Thalassiosira jacksonii
- Thalassiosira jouseae
- Thalassiosira leptopus
- Thalassiosira lineata
- Thalassiosira lusca
- Thalassiosira manifesta
- Thalassiosira marjamicca
- Thalassiosira mediaconvexa
- Thalassiosira minutissima
- Thalassiosira miocenica
- Thalassiosira nordenskioldii
- Thalassiosira orientalis
- Thalassiosira praefraga
- Thalassiosira praenidulus
- Thalassiosira praeyabei
- Thalassiosira robusta
- Thalassiosira sancettae
- Thalassiosira singularis
- Thalassiosira temporei
- Thalassiosira umaoiensis
- Thalassiosira undulosa
- Thalassiosira yabei
- R Thalassiosira spp. T 2
- R Thalassiothrix longissima T 2
- Thalassiothrix spp.
- Trachyneis aspera
- Trachyneis spp.
- Yoshidaia divergens
- Yoshidaia spp.
- F Chaetoceros Resting Spores T 30

Sponge T 1-1-1-1

silico T

closed copora T

silico T

651

Diatom zones (NPD)

Barren

Core, section, interval (cm)

U14 19.D.174cc

DATE: 2013/July/13

OBSERVER'S NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmidiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischabensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonensis
Delphineis surella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonensis
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolioles
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kotzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kotzumii
Neodenticula saminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praearboi
Pseudodimmerograma elegans
Pseudonitzschia senata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praestostrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Suirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schradleri
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamicla
Thalassiosira mediiconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperi
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

***Chaetoceros* Resting Spores**

TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

B
M
P

Core, section, interval (cm)

U14 19.0-18.4cc

DATE: 2013/July/ 13

OBSERVER'S NAME AF (SK) IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
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R (>3 vlv/traverse & <1 vlv/10FOVs)
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Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ocholensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopterychus senarius
Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculis-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentricula ikebei
Crucidentricula kanayae
Crucidentricula nicobarica
Crucidentricula paranicobarica
Crucidentricula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kotzumia tatsunokuchiensis
Kozloviella minor
Listizinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamschatica
Neodenticula koizumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Porosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmergrana elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praelitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praesoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temporei
Thalassiosira umaotensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

***Chaetoceros* Resting Spores**
TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

Barren

Core, section, interval (cm)

U14 19D, 19H cc

DATE: 2013/July/ 13

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinocyclus senarius
Actinocyclus vulgaris
Actinocyclus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradialata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenic
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmiolodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboenis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis laeta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelaeta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilaropsis cylindrus
Fragilaropsis dolotus
Fragilaropsis fossilis
Fragilaropsis oceanica
Fragilaropsis pilocena
Fragilaropsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamschatka
Neodenticula kozumii
Neodenticula seminiae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillarum
Thalassionema nitzschoides
Thalassionema nitzschoides var. *incurvatum*
Thalassionema nitzschoides var. *inflatum*
Thalassionema nitzschoides var. *parvum*
Thalassionema pseudonitzschoides
Thalassionema schraderei
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamae
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenic
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temporei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

SPAGE -

Diatom zones (NPD)

uhjet

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19.D.204cc

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/13

OBSERVER's NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinocyclus senarius
Actinocyclus vulgaris
Actinocyclus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiala
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenic
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmioliscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischabensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha var. *dimorpha*
Denticulopsis dimorpha var. *areolata*
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinatis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolotus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kolzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kantschatica
Neodenticula kolzumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschoides
Thalassionema nitzschoides var. *incurvatum*
Thalassionema nitzschoides var. *inflatum*
Thalassionema nitzschoides var. *parvum*
Thalassionema pseudonitzschoides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
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Thalassiosira leptopus
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Thalassiosira mediaconvexa
Thalassiosira minutissima
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Thalassiosira sancettae
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Thalassiosira temporei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
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Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

undet

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19D. 21HCC

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/ 13

OBSERVER'S NAME AF (SK) IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. *nodus*
Actinocyclus ingens f. *planus*
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenic
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
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Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
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Crucidentricula kanayae
Crucidentricula nicobarica
Crucidentricula parnicobarica
Crucidentricula sawamurae
Cyclotella striata
Cyclotella meneghiniana
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Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
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Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
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Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
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Fragilaria spp.
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Fragilariopsis dolotus
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Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
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Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kolzumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerograma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillarum
Thalassionema nitzschoides
Thalassionema nitzschoides var. *incurvatum*
Thalassionema nitzschoides var. *inflatum*
Thalassionema nitzschoides var. *parvum*
Thalassionema pseudonitzschoides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamca
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenic
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaoniensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

Spunge

Diatom zones (NPD)

Barren
 TOTAL PRESERVATION
 G (good), M (moderate), P (poor)

Trace

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopterychus senarius
Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculis-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Core, section, interval (cm)

U14 19D 23Hcc

TOTAL ABUNDANCE:
 M (>60%), A (20-60%), C (5-20%)
 F (2-5%), R (<2%), B (no diatoms)

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolioles
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisizinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kozumii
Neodenticula seminae
Nitzschia challengeri
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotraceratium radiosoreticulum
Pyxidicula zabelinae

DATE: 2013/July/ 13

OBSERVER's NAME AF (SK) IS

RELATIVE ABUNDANCE OF EACH TAXON
 A (>10 valves/FOV), C (1-10 vlvs/FOV)
 F (>1 vlv/10FOVs & <1 vlv/10FOVs)
 R (>3 vlv/traverse & <1 vlv/10FOVs)
 X (present), B (barren)

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norwegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praesostrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillarum
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamicca
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenicca
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperlei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaeoceros Resting Spores

TOTAL of VEGETATIVE CELLS

Sponge T

Diatom zones (NPD)

Baren

TOTAL PRESERVATION
G (good), M (moderate), P (poor)

Trace

Core, section, interval (cm)

U14 19. D. 294CC

TOTAL ABUNDANCE:
M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/ 13

OBSERVER's NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON
A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (baren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens 1. nodus
Actinocyclus ingens 1. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus otonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopterychus senarius
Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidenticula ikebei
Crucidenticula kanayae
Crucidenticula nicobarica
Crucidenticula paranticobarica
Crucidenticula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha var. *dimorpha*
Denticulopsis dimorpha var. *areolata*
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocana
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikoba tenuis
Kisseleviella canina
Kisseleviella ezoensis
Koizumia tatsunokuchiensis
Koizumiella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula mensculus
Navicula salinarum
Neodenticula kamschatica
Neodenticula koizumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praeborboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotraceratium radiosreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborboii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeeostrupii
Shionodiscus trifidulus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schradri
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularis
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperlei
Thalassiosira umaolensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

sponge -

Diatom zones (NPD)

U14 19E-2H-CC

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

- Achnanthes groenlandica*
- Achnanthes inflata*
- Achnanthes lanceolata*
- Achnanthes lineariformis*
- Achnanthes* spp.
- Actinocyclus curvatus*
- Actinocyclus ellipticus*
- Actinocyclus ingens**
- Actinocyclus ingens 1. nodus**
- Actinocyclus ingens 1. planus**
- Actinocyclus oculatus**
- Actinocyclus ochotensis*
- Actinocyclus octonarius*
- Actinocyclus robustus*
- Actinocyclus tsugaruensis*
- Actinocyclus* spp.
- Actinoptychus senarius*
- Actinoptychus vulgaris*
- Actinoptychus* spp.
- Araniscus lewisianus*
- Araniscus* spp.
- Asteromphalus darwini*
- Asteromphalus oligocenicus*
- Asteromphalus parvulus*
- Asteromphalus robustus*
- Asteromphalus* spp.
- Azpeitia biradiata*
- Azpeitia komurae**
- Azpeitia nodulifera*
- Azpeitia oligocentrica*
- Azpeitia praenodulifera*
- Azpeitia salisburyana*
- Azpeitia tabularis*
- Azpeitia vetustissima*
- Azpeitia* spp.
- Bacterosira bathyomphala*
- Bacterosira fragilis*
- Bacterosira* spp.
- Cavitatus exiguus*
- Cavitatus jouseanus**
- Cavitatus lanceolatus*
- Cavitatus linearis*
- Cavitatus miocenicus*
- Cavitatus rectus*
- Cavitatus* spp.
- Cestodiscus kugleri*
- Cestodiscus trochus*
- Cestodiscus* spp.
- Cocconeis californica*
- Cocconeis costata*
- Cocconeis scutellum*
- Cocconeis* spp.
- Coscinodiscus asteromphalus*
- Coscinodiscus marginatus*
- Coscinodiscus oculus-iridis*
- Coscinodiscus radiatus*
- Coscinodiscus rhombicus*
- Coscinodiscus symbolophorus*
- Cosmodiscus insignis**
- Crucidenticula ikebei*
- Crucidenticula kanayae*
- Crucidenticula nicobarica*
- Crucidenticula paranicobarica*
- Crucidenticula sawamurae*
- Cyclotella striata*
- Cyclotella meneghiniana*
- Cyclotella* spp.
- Cymbella cistula*
- Cymbella minuta*
- Cymbella subaequalis*
- Cymbella* spp.
- Delphineis angustata*
- Delphineis ischaboenis*
- Delphineis kippae*
- Delphineis sachalinensis*
- Delphineis simonsenii**
- Delphineis surirella*
- Delphineis* spp.

Core, section, interval (cm)

U14 19E-2H-CC

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

- Denticulopsis crassa**
- Denticulopsis dimorpha** var. *dimorpha*
- Denticulopsis dimorpha** var. *areolata*
- Denticulopsis hustedii**
- Denticulopsis hyalina**
- Denticulopsis katayamae**
- Denticulopsis laeta**
- Denticulopsis praedimorpha** var. *minor*
- Denticulopsis praedimorpha** var. *praedimorpha*
- Denticulopsis praehyalina**
- Denticulopsis praekatayamae**
- Denticulopsis praelaeta**
- Denticulopsis simonsenii**
- Denticulopsis tanimurae**
- Denticulopsis vulgaris**
- Diploneis bombus*
- Diploneis puella*
- Diploneis smithii*
- Diploneis suborbicularis*
- Diploneis* spp.
- Distephanosira architecturalis*
- Distephanosira* spp.
- Ellerbeckia sol*
- Ellerbeckia* spp.
- Eunotia pectinalis* var. *minor*
- Eunotia praerupta* var. *praerupta*
- Eunotia* spp.
- Fragilaria construens*
- Fragilaria* spp.
- Fragilariopsis cylindrus*
- Fragilariopsis dolius**
- Fragilariopsis fossilis**
- Fragilariopsis oceanica*
- Fragilariopsis pilocena**
- Fragilariopsis* spp.
- Goniothecium decoratum*
- Goniothecium rogersii*
- Goniothecium* spp.
- Grammatophora* spp.
- Halamphora costata*
- Hyalodiscus obsoletus*
- Hyalodiscus* spp.
- Ikebea tenuis**
- Kisseleviella carina*
- Kisseleviella ezoensis*
- Koizumia tatsunokuchiensis**
- Kozloviella minor*
- Lisitzinia ornata*
- Mediaria magna**
- Mediaria splendida**
- Melosira albicans*
- Navicula elginensis*
- Navicula lyroides*
- Navicula menisculus*
- Navicula salinarum*
- Neodenticula kantschatka**
- Neodenticula koizumii**
- Neodenticula saminiae**
- Nitzschia challengerii*
- Nitzschia jouseae**
- Nitzschia palea*
- Nitzschia reinholdii**
- Nitzschia rolandii**
- Odontella aurita*
- Odontella* spp.
- Paralia sulcata*
- Paralia* spp.
- Podosira stelligera*
- Porosira glacialis*
- Proboscia barboi**
- Proboscia curvirostris**
- Proboscia interposita*
- Proboscia praebarboi*
- Pseudodimmergramma elegans*
- Pseudonitzschia seriata*
- Pseudopyxilla americana*
- Pseudotriceratium radiosoreticulatum*
- Pyxidicula zabellinae**

DATE: 2013/July/13

OBSERVER's NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Rhaphoneis amphicerus*
- Rhaphoneis* spp.
- Rhizosolenia hebetata* 1. *hiemalis*
- Rhizosolenia hebetata* 1. *semispina*
- Rhizosolenia norvegica*
- Rhizosolenia praeborgonii**
- Rhizosolenia setigera*
- Rhizosolenia* spp.
- Roperia tessellata*
- Rocella gelida*
- Rocella praenitida*
- Rocella semigelida*
- Rocella vigilans*
- Rouxia californica**
- Rouxia granda*
- Rouxia isopolica*
- Rouxia naviculoides*
- Rouxia obesa*
- X **Shionodiscus oestrupii** - 1
- X **Shionodiscus praecoestrupii** - 1
- X *Shionodiscus trifidus* - 1
- X *Stephanopyxis dimorpha* - 1
- X **Stephanopyxis horridus** - 1
- X *Stephanopyxis lurreis* - 1
- X *Stephanopyxis* spp.
- Sutirella* spp.
- Thalassionema bacillaris*
- Thalassionema nitzschioides*
- Thalassionema nitzschioides* var. *incurvatum*
- Thalassionema nitzschioides* var. *inflatum*
- Thalassionema nitzschioides* var. *parvum*
- Thalassionema pseudonitzschioides*
- Thalassionema schraderi**
- Thalassionema* spp.
- Thalassiosira antiqua**
- Thalassiosira bioculata*
- Thalassiosira castanea**
- Thalassiosira convexa**
- Thalassiosira decipiens*
- X *Thalassiosira dubiosa* - 1
- X *Thalassiosira eccentrica* - 1
- X *Thalassiosira fasciculata* - 1
- X *Thalassiosira fraga* - 1
- X *Thalassiosira gravida* - 1
- X **Thalassiosira grunowii** - 1
- X *Thalassiosira hyalina* - 1
- X *Thalassiosira irregularata* - 1
- X **Thalassiosira jacksonii** - 1
- X **Thalassiosira jouseae** - 1
- X *Thalassiosira leptopus* - 1
- X *Thalassiosira lineata* - 1
- X *Thalassiosira lusca* - 1
- X *Thalassiosira manifesta* - 1
- X **Thalassiosira marujamca** - 1
- X *Thalassiosira mediaconvexa* - 1
- X **Thalassiosira minutissima** - 1
- X *Thalassiosira miocenicica* - 1
- X *Thalassiosira nordenskioldii* - 1
- X *Thalassiosira orientalis* - 1
- X *Thalassiosira praefraga* - 1
- X *Thalassiosira praenidulus* - 1
- X *Thalassiosira praeyabei* - 1
- X *Thalassiosira robusta* - 1
- X *Thalassiosira sancettae* - 1
- X **Thalassiosira singularis** - 1
- X **Thalassiosira temporalis** - 1
- X *Thalassiosira umaensis* - 1
- X *Thalassiosira undulosa* - 1
- X **Thalassiosira yabei** - 1
- X *Thalassiosira* spp.
- X *Thalassiothrix longissima* - 1
- X *Thalassiothrix* spp.
- X *Trachyneis aspera* - 1
- X *Trachyneis* spp.
- X *Yoshidaia divergens* - 1
- X *Yoshidaia* spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

sponge -
Asam
closed capsule

Pea -

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19, E, JH 2w 100

DATE: 2013/July/ 18

OBSERVER's NAME AF (SK) IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocena
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmidiscus insignis
Crucidenticula ikebei
Crucidenticula kanayae
Crucidenticula nicobarica
Crucidenticula paranicobarica
Crucidenticula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboenensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis prae-hyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plicata
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kotzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamschatka
Neodenticula koizumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praeborboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praeinitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoidea
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeoestrupii
Shionodiscus trifidus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Suirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderei
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularis
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocena
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperi
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

***Chaetoceros* Resting Spores**
TOTAL of VEGETATIVE CELLS

Sponge F * -
closed cuprate

FF- 11
87

Diatom zones (NPD)

undet.

Core, section, interval (cm)

U14 19E-3H-CC

DATE: 2013/July/13

OBSERVER'S NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

G

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

M

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica*
- Achnanthes inflata*
- Achnanthes lanceolata*
- Achnanthes lineariformis*
- Achnanthes* spp.
- Actinocyclus curvatus*
- Actinocyclus ellipticus*
- Actinocyclus ingens**
- Actinocyclus ingens* f. *nodus*
- Actinocyclus ingens* f. *planus*
- Actinocyclus ocellatus**
- Actinocyclus ochotensis*
- Actinocyclus octonarius*
- Actinocyclus robustus*
- Actinocyclus tsugaruensis*
- Actinocyclus* spp.
- Actinoptychus senarius*
- Actinoptychus vulgaris*
- Actinoptychus* spp.
- Araniscus lewisianus*
- Araniscus* spp.
- Asteromphalus darwinii*
- Asteromphalus oligocenicus*
- Asteromphalus parvulus*
- Asteromphalus robustus*
- Asteromphalus* spp.
- Azpeitia biradiata*
- Azpeitia komurae**
- Azpeitia nodulifera*
- Azpeitia oligocenica*
- Azpeitia praenodulifera*
- Azpeitia salisburyana*
- Azpeitia tabularis*
- Azpeitia vetustissima*
- Azpeitia* spp.
- Bacterosira bathyomphala*
- Bacterosira fragilis*
- Bacterosira* spp.
- Cavitatus exiguus*
- Cavitatus jouseanus**
- Cavitatus lanceolatus*
- Cavitatus linearis*
- Cavitatus miocenicus*
- Cavitatus rectus*
- Cavitatus* spp.
- Cestodiscus kugleri*
- Cestodiscus trochus*
- Cestodiscus* spp.
- Cocconeis californica*
- Cocconeis costata*
- Cocconeis scutellum*
- Cocconeis* spp.
- Coscinodiscus asteromphalus*
- Coscinodiscus marginatus*
- Coscinodiscus oculus-iridis*
- Coscinodiscus radiatus*
- Coscinodiscus rhombicus*
- Coscinodiscus symbolophorus*
- Cosmodiscus insignis**
- Crucidentacula ikebei*
- Crucidentacula kanayae*
- Crucidentacula nicobarica*
- Crucidentacula paranicobarica*
- Crucidentacula sawamurae*
- Cyclotella striata*
- Cyclotella meneghiniana*
- Cyclotella* spp.
- Cymbella cistula*
- Cymbella minuta*
- Cymbella subaequalis*
- Cymbella* spp.
- Delphineis angustata*
- Delphineis ischaboensis*
- Delphineis kippae*
- Delphineis sachalinensis*
- Delphineis simonsenii**
- Delphineis surirella*
- Delphineis* spp.

fragments

- Denticulopsis crassa**
- Denticulopsis dimorpha* var. *dimorpha*
- Denticulopsis dimorpha* var. *areolata*
- Denticulopsis hustedii*
- Denticulopsis hyalina*
- Denticulopsis katayamae**
- Denticulopsis lauta*
- Denticulopsis praedimorpha* var. *minor*
- Denticulopsis praedimorpha* var. *praedimorpha*
- Denticulopsis praehyalina*
- Denticulopsis praekatayamae**
- Denticulopsis praelauta*
- Denticulopsis simonsenii*
- Denticulopsis tanimurae*
- Denticulopsis vulgaris**
- Denticulopsis* spp.
- Diploneis bombus*
- Diploneis puella*
- Diploneis smithii*
- Diploneis suborbicularis*
- Diploneis* spp.
- Distephanosira architecturalis*
- Distephanosira* spp.
- Ellerbeckia sol*
- Ellerbeckia* spp.
- Eunotia pectinalis* var. *minor*
- Eunotia praerupta* var. *praerupta*
- Eunotia* spp.
- Fragilaria construens*
- Fragilaria* spp.
- Fragilariopsis cylindrus*
- Fragilariopsis dolotus**
- Fragilariopsis fossilis*
- Fragilariopsis oceanica*
- Fragilariopsis pilocana**
- Fragilariopsis* spp.
- Goniothecium decoratum*
- Goniothecium rogersii*
- Goniothecium* spp.
- Grammatophora* spp.
- Halamphora costata*
- Hyalodiscus obsoletus*
- Hyalodiscus* spp.
- Ikebea tenuis**
- Kisseleviella carina*
- Kisseleviella ezoensis*
- Kozumia tatsunokuchlensis**
- Kozioviella minor*
- Lisitzinia ornata*
- Medlaria magna**
- Medlaria splendida**
- Melosira albicans*
- Navicula elginensis*
- Navicula lyroides*
- Navicula menisculus*
- Navicula salinarum*
- Neodenticula kamschatka**
- Neodenticula kolzumii**
- Neodenticula seminiae**
- Nitzschia challengerii*
- Nitzschia jouseae**
- Nitzschia palea*
- Nitzschia reinholdii**
- Nitzschia rolandii**
- Odontella aurita*
- Odontella* spp.
- Paralia sulcata*
- Paralia* spp.
- Podosira stelligera*
- Porosira glacialis*
- Proboscia barboi**
- Proboscia curvirostris**
- Proboscia interposita*
- Proboscia praebarboi*
- Pseudodimmerogramma elegans*
- Pseudonitzschia seriata*
- Pseudopyxilla americana*
- Pseudotriceratium radiosoreticulatum*
- Pyxidicula zabelinae**

X

X Nif. sp. - 1

closed opala
Pese IF

- Rhaphoneis amphicros*
- Rhaphoneis* spp.
- Rhizosolenia hebetata* f. *hiemalis*
- Rhizosolenia hebetata* f. *semispina*
- Rhizosolenia norvegica*
- Rhizosolenia praebergonii**
- Rhizosolenia setigera*
- Rhizosolenia* spp.
- Roperia tessellata*
- Rocella gelida*
- Rocella praenitida*
- Rocella semigelida*
- Rocella vigilans*
- Rouxia californica**
- Rouxia granda*
- Rouxia isopolica*
- Rouxia naviculoides*
- Rouxia obesa*
- Shionodiscus oestrupii**
- Shionodiscus praecoestrupii**
- Shionodiscus trifultus*
- Stephanopyxis dimorpha*
- Stephanopyxis horridus**
- Stephanopyxis turris*
- Stephanopyxis* spp.
- Surirella* spp.
- Thalassionema bacillaris*
- Thalassionema nitzschioides*
- Thalassionema nitzschioides* var. *incurvatum*
- Thalassionema nitzschioides* var. *inflatum*
- Thalassionema nitzschioides* var. *parvum*
- Thalassionema pseudonitzschioides*
- Thalassionema schraderi**
- Thalassionema* spp.
- Thalassiosira antiqua**
- Thalassiosira bioculata*
- Thalassiosira castanea**
- Thalassiosira convexa**
- Thalassiosira decipiens*
- Thalassiosira dubiosa*
- Thalassiosira eccentrica*
- Thalassiosira fasciculata*
- Thalassiosira fraga*
- Thalassiosira gravida*
- Thalassiosira grunowii**
- Thalassiosira hyalina*
- Thalassiosira irregulara*
- Thalassiosira jacksonii**
- Thalassiosira jouseae**
- Thalassiosira leptopus*
- Thalassiosira lineata*
- Thalassiosira lusca*
- Thalassiosira manifesta*
- Thalassiosira marujamica**
- Thalassiosira mediaconvexa*
- Thalassiosira minutissima**
- Thalassiosira miocenica*
- Thalassiosira nordenskioldii*
- Thalassiosira orientalis*
- Thalassiosira praefraga*
- Thalassiosira praenitidula*
- Thalassiosira praeyabei*
- Thalassiosira robusta*
- Thalassiosira sancettae*
- Thalassiosira singularis**
- Thalassiosira temperei**
- Thalassiosira umaensis*
- Thalassiosira undulosa*
- Thalassiosira yabei**
- Thalassiosira* spp.
- Thalassiothrix longissima*
- Thalassiothrix* spp.
- Trachyneis aspera*
- Trachyneis* spp.
- Yoshidaia divergens*
- Yoshidaia* spp.

X

X

X

X

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

X 17

Diatom zones (NPD)

under-

Core, section, interval (cm)

U1419E-6H-7C

DATE: 2013/July/13

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%) R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica*
- Achnanthes inflata*
- Achnanthes lanceolata*
- Achnanthes lineariformis*
- Achnanthes* spp.
- Actinocyclus curvatulus*
- Actinocyclus ellipticus*
- Actinocyclus ingens***
- Actinocyclus ingens* 1. nodus**
- Actinocyclus ingens* 1. planus**
- Actinocyclus oculatus***
- Actinocyclus ochotensis*
- Actinocyclus oclonarius*
- Actinocyclus robustus*
- Actinocyclus tsugaruensis*
- Actinocyclus* spp.
- Actinoptychus senarius*
- Actinoptychus vulgaris*
- Actinoptychus* spp.
- Araniscus lewisianus*
- Araniscus* spp.
- Asteromphalus darwini*
- Asteromphalus oligocenicus*
- Asteromphalus parvulus*
- Asteromphalus robustus*
- Asteromphalus* spp.
- Azpeitia biradiata*
- Azpeitia komurae***
- Azpeitia nodulifera*
- Azpeitia oligocena*
- Azpeitia praenodulifera*
- Azpeitia salisburyana*
- Azpeitia tabularis*
- Azpeitia vetustissima*
- Azpeitia* spp.
- Bacterosira bathyomphala*
- Bacterosira fragilis*
- Bacterosira* spp.
- Cavitatus exiguus*
- Cavitatus jouseanus***
- Cavitatus lanceolatus*
- Cavitatus linearis*
- Cavitatus miocenicus*
- Cavitatus rectus*
- Cavitatus* spp.
- Cestodiscus kugleri*
- Cestodiscus trochus*
- Cestodiscus* spp.
- Cocconeis californica*
- Cocconeis costata*
- Cocconeis scutellum*
- Cocconeis* spp.
- Coscinodiscus asteromphalus*
- Coscinodiscus marginatus*
- Coscinodiscus oculus-iridis*
- Coscinodiscus radiatus*
- Coscinodiscus rhombicus*
- Coscinodiscus symbolophorus*
- Cosmodiscus insignis***
- Crucidentacula ikebei*
- Crucidentacula kanayae*
- Crucidentacula nicobarica*
- Crucidentacula parnicobarica*
- Crucidentacula sawamurae*
- Cyclotella striata*
- Cyclotella meneghiniana*
- Cyclotella* spp.
- Cymbella cistula*
- Cymbella minuta*
- Cymbella subaequalis*
- Cymbella* spp.
- Delphineis angustata*
- Delphineis ischaboenis*
- Delphineis kippae*
- Delphineis sachalinensis*
- Delphineis simonsenii***
- Delphineis surirella*
- Delphineis* spp.

- Denticulopsis crassa***
- Denticulopsis dimorpha* var. *dimorpha***
- Denticulopsis dimorpha* var. *areolata***
- Denticulopsis hustedii***
- Denticulopsis hyalina***
- Denticulopsis katayamae***
- Denticulopsis lauta***
- Denticulopsis praedimorpha* var. *minor***
- Denticulopsis praedimorpha* var. *praedimorpha***
- Denticulopsis praehyalina***
- Denticulopsis praekatayamae***
- Denticulopsis praelauta***
- Denticulopsis simonsenii***
- Denticulopsis tanimurae***
- Denticulopsis vulgaris***
- Denticulopsis* spp.
- Diploneis bombus*
- Diploneis puella*
- Diploneis smithii*
- Diploneis suborbicularis*
- Diploneis* spp.
- Distephanosira architecturalis*
- Distephanosira* spp.
- Ellerbeckia sol*
- Ellerbeckia* spp.
- Eunotia pectinalis* var. *minor*
- Eunotia praerupta* var. *praerupta*
- Eunotia* spp.
- Fragilaria construens*
- Fragilaria* spp.
- Fragilariopsis cylindrus*
- Fragilariopsis doliolus***
- Fragilariopsis fossilis***
- Fragilariopsis oceanica*
- Fragilariopsis pilocena***
- Fragilariopsis* spp.
- Goniothecium decoratum*
- Goniothecium rogersii*
- Goniothecium* spp.
- Grammatophora* spp.
- Halamphora costata*
- Hyalodiscus obsoletus*
- Hyalodiscus* spp.
- Ikobeia tenuis***
- Kisseleviella carina*
- Kisseleviella ezoensis*
- Koizumia tatsunokuchiensis***
- Kozloviella minor*
- Lisizinia omata*
- Mediaria magna***
- Mediaria splendida***
- Melosira albicans*
- Navicula elginensis*
- Navicula lyroides*
- Navicula menisculus*
- Navicula salinarum*
- Neodenticula kamtschatica***
- Neodenticula koizumii***
- Neodenticula seminiae***
- Nitzschia challengerii*
- Nitzschia jouseae***
- Nitzschia palea*
- Nitzschia reinholdii***
- Nitzschia rolandii***
- Odontella aurita*
- Odontella* spp.
- Paralia sulcata*
- Paralia* spp.
- Podosira stelligera*
- Porosira glacialis*
- Proboscia barboi***
- Proboscia curvirostris***
- Proboscia interposita*
- Proboscia praebarboi*
- Pseudodimmerogramma elegans*
- Pseudonitzschia seriata*
- Pseudopyxilla americana*
- Pseudotriceratium radiosoreticulatum*
- Pyxidicula zabelinae***

- Rhaphoneis amphiceris*
- Rhaphoneis* spp.
- Rhizosolenia hebetata* f. *hiemalis*
- Rhizosolenia hebetata* f. *semispina*
- Rhizosolenia norwegica*
- Rhizosolenia praebergonii***
- Rhizosolenia setigera*
- Rhizosolenia* spp.
- Roperia tessellata*
- Rocella gelida*
- Rocella praenitida*
- Rocella semigelida*
- Rocella vigilans*
- Rouxia californica***
- Rouxia granda*
- Rouxia isopolica*
- Rouxia naviculoides*
- Rouxia obesa*
- Shionodiscus oestrupii***
- Shionodiscus praeeustrupii***
- Shionodiscus trifolius*
- Stephanopyxis dimorpha*
- Stephanopyxis horridus***
- Stephanopyxis turris*
- Stephanopyxis* spp.
- Surirella* spp.
- Thalassionema bacillaris*
- Thalassionema nitzschioides*
- Thalassionema nitzschioides* var. *incurvatum*
- Thalassionema nitzschioides* var. *inflatum*
- Thalassionema nitzschioides* var. *parvum*
- Thalassionema pseudonitzschioides*
- Thalassionema schraderi***
- Thalassionema* spp.
- Thalassiosira antiqua***
- Thalassiosira bioculata*
- Thalassiosira castanea***
- Thalassiosira convexa***
- Thalassiosira decipiens*
- Thalassiosira dubiosa*
- Thalassiosira eccentrica*
- Thalassiosira fasciculata*
- Thalassiosira fraga*
- Thalassiosira gravida*
- Thalassiosira grunowii***
- Thalassiosira hyalina*
- Thalassiosira irregulata*
- Thalassiosira jacksonii***
- Thalassiosira jouseae***
- Thalassiosira leptopus*
- Thalassiosira lineata*
- Thalassiosira lusca*
- Thalassiosira manifesta*
- Thalassiosira marjameica***
- Thalassiosira mediaconvexa*
- Thalassiosira minutissima***
- Thalassiosira miocena*
- Thalassiosira nordenskiöldii*
- Thalassiosira orientalis*
- Thalassiosira praefraga*
- Thalassiosira praenidulus*
- Thalassiosira praeyabei*
- Thalassiosira robusta*
- Thalassiosira sancettae*
- Thalassiosira singularis***
- Thalassiosira temperi***
- Thalassiosira umaoniensis*
- Thalassiosira undulosa*
- Thalassiosira yabei***
- Thalassiosira* spp.
- Thalassiothrix longissima*
- Thalassiothrix* spp.
- Trachyneis aspera*
- Trachyneis* spp.
- Yoshidaia divergens*
- Yoshidaia* spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

fraguare

Diatom zones (NPD)

undet

Core, section, interval (cm)

U14 19E-9M-C

DATE: 2013/July/13

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopteryx senarius
Actinopteryx vulgaris
Actinopteryx spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocentica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmirodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboenis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolioles
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebaea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kantschatica
Neodenticula kozumii
Neodenticula saminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabellinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norwegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
X *Shionodiscus oestrupii* IF 4
X *Shionodiscus praeoestrupii*
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillarum
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderei
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamae
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenicica
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temporei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

fragments

6

Diatom zones (NPD)

TOTAL PRESERVATION
G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 195-114-cc

TOTAL ABUNDANCE:
M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July 13

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 valves/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica
- Achnanthes inflata
- Achnanthes lanceolata
- Achnanthes lineariformis
- Achnanthes spp.
- Actinocyclus curvatus
- Actinocyclus ellipticus
- Actinocyclus ingens
- Actinocyclus ingens f. nodus
- Actinocyclus ingens f. planus
- Actinocyclus oculatus
- Actinocyclus ochotensis
- Actinocyclus octonarius
- Actinocyclus robustus
- Actinocyclus tsugaruensis
- Actinocyclus spp.
- Actinoptychus senarius
- Actinoptychus vulgaris
- Actinoptychus spp.
- Araniscus lewisianus
- Araniscus spp.
- Asteromphalus darwinii
- Asteromphalus oligocenicus
- Asteromphalus parvulus
- Asteromphalus robustus
- Asteromphalus spp.
- Azpeitia biradialata
- Azpeitia komurae
- Azpeitia nodulifera
- Azpeitia oligocenicata
- Azpeitia praenodulifera
- Azpeitia salisburyana
- Azpeitia tabularis
- Azpeitia vetustissima
- Azpeitia spp.
- Bacterosira bathyomphala
- Bacterosira fragilis
- Bacterosira spp.
- Cavitatus exiguus
- Cavitatus jouseanus
- Cavitatus lanceolatus
- Cavitatus linearis
- Cavitatus miocenicus
- Cavitatus rectus
- Cavitatus spp.
- Cestodiscus kugleri
- Cestodiscus trochus
- Cestodiscus spp.
- Cocconeis californica
- Cocconeis costata
- Cocconeis scutellum
- Cocconeis spp.
- Coscinodiscus asteromphalus
- Coscinodiscus marginatus
- Coscinodiscus oculus-iridis
- Coscinodiscus radiatus
- Coscinodiscus rhombicus
- Coscinodiscus symbolophorus
- Cosmidiscus insignis
- Crucidentacula ikebei
- Crucidentacula kanayae
- Crucidentacula nicobarica
- Crucidentacula paranicobarica
- Crucidentacula sawamurae
- Cyclotella striata
- Cyclotella meneghiniana
- Cyclotella spp.
- Cymbella cistula
- Cymbella minuta
- Cymbella subaequalis
- Cymbella spp.
- Delphineis angustata
- Delphineis ischaboensis
- Delphineis kippae
- Delphineis sachalinensis
- Delphineis simonsenii
- Delphineis surirella
- Delphineis spp.

- Denticulopsis crassa
- Denticulopsis dimorpha var. dimorpha
- Denticulopsis dimorpha var. areolata
- Denticulopsis hustedii
- Denticulopsis hyalina
- Denticulopsis katayamae
- Denticulopsis lauta
- Denticulopsis praedimorpha var. minor
- Denticulopsis praedimorpha var. praedimorpha
- Denticulopsis praehyalina
- Denticulopsis praekatayamae
- Denticulopsis praelauta
- Denticulopsis simonsenii
- Denticulopsis tanimurae
- Denticulopsis vulgaris
- Diploneis bombus
- Diploneis puella
- Diploneis smithii
- Diploneis suborbicularis
- Diploneis spp.
- Distephanosira architecturalis
- Distephanosira spp.
- Ellerbeckia sol
- Ellerbeckia spp.
- Eunotia pectinalis var. minor
- Eunotia praerupta var. praerupta
- Eunotia spp.
- Fragilaria construens
- Fragilaria spp.
- Fragilariopsis cylindrus
- Fragilariopsis dolipus
- Fragilariopsis fossilis
- Fragilariopsis oceanica
- Fragilariopsis pilocana
- Fragilariopsis spp.
- Goniothecium decoratum
- Goniothecium rogersii
- Goniothecium spp.
- Grammatophora spp.
- Halamphora costata
- Hyalodiscus obsoletus
- Hyalodiscus spp.
- Ikebea tenuis
- Kisseleviella carina
- Kisseleviella ezoensis
- Kotzumia tatsunokuchiensis
- Kozloviella minor
- Lisitzinia ornata
- Mediaria magna
- Mediaria splendida
- Melosira albicans
- Navicula elginensis
- Navicula lyroides
- Navicula menisculus
- Navicula salinarum
- Neodenticula kantschatkae
- Neodenticula kolzumii
- Neodenticula saminae
- Nitzschia challengerii
- Nitzschia jouseae
- Nitzschia palea
- Nitzschia reinholdii
- Nitzschia rolandii
- Odontella aurita
- Odontella spp.
- Paralia sulcata
- Paralia spp.
- Podosira stelligera
- Porosira glacialis
- Porosira glacialis
- Proboscia barbol
- Proboscia curvirostris
- Proboscia interposita
- Proboscia praearbol
- Pseudodimmerogramma elegans
- Pseudonitzschia seriata
- Pseudopyxilla americana
- Pseudotracerium radiosoreticulatum
- Pyxidula zabelinae

- Rhaphoneis amphicerus
- Rhaphoneis spp.
- Rhizosolenia hebetata f. hiemalis
- Rhizosolenia hebetata f. semispina
- Rhizosolenia norvegica
- Rhizosolenia praebregonii
- Rhizosolenia setigera
- Rhizosolenia spp.
- Ropenia tessellata
- Rocella gelida
- Rocella praenitida
- Rocella semigelida
- Rocella vigilans
- Rouxia californica
- Rouxia granda
- Rouxia isopolica
- Rouxia naviculoides
- Rouxia obesa
- Shionodiscus oestrupii
- Shionodiscus praecoestrupii
- Shionodiscus trifultus
- Stephanopyxis dimorpha
- Stephanopyxis horridus
- Stephanopyxis lurreis
- Stephanopyxis spp.
- Surirella spp.
- Thalassionema bacillaris
- Thalassionema nitzschioides
- Thalassionema nitzschioides var. incurvatum
- Thalassionema nitzschioides var. inflatum
- Thalassionema nitzschioides var. parvum
- Thalassionema pseudonitzschioides
- Thalassionema schraderi
- Thalassionema spp.
- Thalassiosira antiqua
- Thalassiosira bioculata
- Thalassiosira castanea
- Thalassiosira convexa
- Thalassiosira decipiens
- Thalassiosira dubiosa
- Thalassiosira eccentrica
- Thalassiosira fasciculata
- Thalassiosira fraga
- Thalassiosira gravida
- Thalassiosira grunowii
- Thalassiosira hyalina
- Thalassiosira irregularata
- Thalassiosira jacksonii
- Thalassiosira jouseae
- Thalassiosira leptopus
- Thalassiosira lineata
- Thalassiosira lusca
- Thalassiosira manifesta
- Thalassiosira marjamicca
- Thalassiosira mediaconvexa
- Thalassiosira minutissima
- Thalassiosira miocenicata
- Thalassiosira nordenskioldii
- Thalassiosira orientalis
- Thalassiosira praefraga
- Thalassiosira praenidulus
- Thalassiosira praeyabei
- Thalassiosira robusta
- Thalassiosira cancellatae
- Thalassiosira singularis
- Thalassiosira temporei
- Thalassiosira umauiensis
- Thalassiosira undulosa
- Thalassiosira yabei
- Thalassiosira spp.
- Thalassiothrix longissima
- Thalassiothrix spp.
- Trachyneis aspera
- Trachyneis spp.
- Yoshidaia divergens
- Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

sponge

Rest

Diatom zones (NPD)

B

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinocyclus senarius
Actinocyclus vulgaris
Actinocyclus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenic
Azpeitia praenodulifera
Azpeitia saisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseaui
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentula ikebei
Crucidentula kanayae
Crucidentula nicobarica
Crucidentula paranicobarica
Crucidentula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Core, section, interval (cm)

U14 19E-13 H-CC

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (nb diatoms)

Denticulopsis crassa
Denticulopsis dimorpha var. *dimorpha*
Denticulopsis dimorpha var. *areolata*
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariaopsis cylindrus
Fragilariaopsis dolioles
Fragilariaopsis fossilis
Fragilariaopsis oceanica
Fragilariaopsis pilocana
Fragilariaopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Koizumia tatsunokuchlensis
Koizumia minor
Lisztinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula koizumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praeparboi
Pseudodimmergramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidicula zabolinae

DATE: 2013/July/13

OBSERVER'S NAME (AF) SK IS

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)

F (>1 vlv/10FOVs & <1 vlv/10FOVs)

R (>3 vlv/traverse & <1 vlv/10FOVs)

X (present), B (barren)

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. hiemalis
Rhizosolenia hebetata f. semispina
Rhizosolenia norvegica
Rhizosolenia praeborgii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderei
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenic
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenitidula
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperi
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

fraguere

Diatom zones (NPD)

NPD/2

Core, section, interval (cm)

U14 19 E 144-CC

DATE: 2013/July/ 18

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopteryx senarius
Actinopteryx vulgaris
Actinopteryx spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocentrica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis sunirella
Delphineis spp.

全種見上

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedtii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plicocera
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kotzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kolzumii
Neodenticula seminae F
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praerubra
Pseudodimmerogramma elegans
Pseudonitzschia seniata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidula zabelinae

R3

R2

R3

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semipinna*
Rhizosolenia norvegica
Rhizosolenia praeborgii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeostrupii
Shionodiscus trifolius T
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Sunirella spp.
Thalassionema bacillarum
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schradri
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica F
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenicata
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperi
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

2 ***Chaetoceros* Resting Spores** T
TOTAL of VEGETATIVE CELLS

closed cap

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19E-15H-1W, 90cm

DATE: 2013/July/15

OBSERVER'S NAME AF SK IS

TOTAL PRESERVATION

G (good) M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligogenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azepeitia biradiata
Azepeitia komurae
Azepeitia nodulifera
Azepeitia oligocenica
Azepeitia praenodulifera
Azepeitia salisburyana
Azepeitia tabularis
Azepeitia vetustissima
Azepeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Coscinodiscus insignis
Cosmidiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboenis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonseni
Delphineis surirella
Delphineis spp.

- Denticulopsis crassa
Denticulopsis dimorpha var. dimorpha
Denticulopsis dimorpha var. areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis leuta
Denticulopsis praedimorpha var. minor
Denticulopsis praedimorpha var. praedimorpha
Denticulopsis praealyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonseni
Denticulopsis tanimurae
Denticulopsis vulgaris
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. minor
Eunotia praerupta var. praerupta
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolioles
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsotetus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kolzumia tatsunokuchlensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kantschatka
Neodenticula koizumii
Neodenticula seminiae
Nitzschia challengeri
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Porosira glacialis
Proboscia barbol
Proboscia curvirostris
Proboscia interposita
Proboscia praeparbol
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidcula zabelinae

- Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. hiemalis
Rhizosolenia hebetata f. semispina
Rhizosolenia norvegica
Rhizosolenia praebregonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praeoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Suriella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. incurvatum
Thalassionema nitzschioides var. inflatum
Thalassionema nitzschioides var. parvum
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjamicca
Thalassiosira medicaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperlei
Thalassiosira umaoiensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

RB

R2

R1

R1

R1

R2

C3

F11

6

A8 45

R4

45

189/100

Handwritten tally marks and notes at the bottom right.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

100

closed, silicos Dino

4.0 5.0

130 RB

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19E-154-2W, 10 cm

DATE: 2013/July/ 15

OBSERVER's NAME AF SK (S)

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica
- Achnanthes inflata
- Achnanthes lanceolata
- Achnanthes lineariformis
- Achnanthes spp.
- Actinocyclus curvatus
- Actinocyclus ellipticus
- Actinocyclus ingens
- Actinocyclus ingens f. nodus
- Actinocyclus ingens f. planus
- Actinocyclus oculatus
- Actinocyclus ochotensis
- Actinocyclus octonarius
- Actinocyclus robustus
- Actinocyclus tsugaruensis
- Actinocyclus spp.
- Actinocyclus senarius
- Actinocyclus vulgaris
- Actinocyclus spp.
- Araniscus lewisianus
- Araniscus spp.
- Asteromphalus darwinii
- Asteromphalus oligocenicus
- Asteromphalus parvulus
- Asteromphalus robustus
- Asteromphalus spp.
- Azpeitia biradiala
- Azpeitia komurae
- Azpeitia nodulifera
- Azpeitia oligocentrica
- Azpeitia praenodulifera
- Azpeitia salisburyana
- Azpeitia tabularis
- Azpeitia vetustissima
- Azpeitia spp.
- Bacterosira bathyomphala
- Bacterosira fragilis
- Bacterosira spp.
- Cavitatus exiguus
- Cavitatus jouseanus
- Cavitatus lanceolatus
- Cavitatus linearis
- Cavitatus miocenicus
- Cavitatus rectus
- Cavitatus spp.
- Cestodiscus kugleri
- Cestodiscus trochus
- Cestodiscus spp.
- Cocconeis californica
- Cocconeis costata
- Cocconeis scutellum
- Cocconeis spp.
- Coccinodiscus asteromphalus
- Coccinodiscus marginatus
- Coccinodiscus oculus-iridis
- Coccinodiscus radiatus
- Coccinodiscus rhombicus
- Coccinodiscus symbolophorus
- Coccinodiscus insignis
- Crucidenticula ikebei
- Crucidenticula kanayae
- Crucidenticula nicobarica
- Crucidenticula paranicobarica
- Crucidenticula sawamurae
- Cyclotella striata
- Cyclotella meneghiniana
- Cyclotella spp.
- Cymbella cistula
- Cymbella minuta
- Cymbella subaequalis
- Cymbella spp.
- Delphineis angustata
- Delphineis ischaboensis
- Delphineis kippae
- Delphineis sachalinensis
- Delphineis simonsenii
- Delphineis surirella
- Delphineis spp.

- Denticulopsis crassa
- Denticulopsis dimorpha var. dimorpha
- Denticulopsis dimorpha var. areolata
- Denticulopsis hustedtii
- Denticulopsis hyalina
- Denticulopsis katayamae
- Denticulopsis lauta
- Denticulopsis praedimorpha var. minor
- Denticulopsis praedimorpha var. praedimorpha
- Denticulopsis praehyalina
- Denticulopsis praekatayamae
- Denticulopsis praelauta
- Denticulopsis simonsenii
- Denticulopsis tanimurae
- Denticulopsis vulgaris
- Diploneis bombus
- Diploneis puella
- Diploneis smithii
- Diploneis suborbicularis
- Diploneis spp.
- Distephanosira architecturata
- Distephanosira spp.
- Ellerbeckia sol
- Ellerbeckia spp.
- Eunotia pectinatis var. minor
- Eunotia praerupta var. praerupta
- Eunotia spp.
- Fragilaria construens
- Fragilaria spp.
- Fragilariaopsis cylindrus
- Fragilariaopsis dolius
- Fragilariaopsis fossilis
- Fragilariaopsis oceanica
- Fragilariaopsis pilocena
- Fragilariaopsis spp.
- Goniothecium decoratum
- Goniothecium rogersii
- Goniothecium spp.
- Grammatophora spp.
- Halamphora costata
- Hyalodiscus obsoletus
- Hyalodiscus spp.
- Ikebea tenuis
- Kisseleviella carina
- Kisseleviella ezoensis
- Kozumia tatsunokuchiensis
- Kozloviella minor
- Lisitzinia ornata
- Mediaria magna
- Mediaria splendida
- Melosira albicans
- Navicula elginensis
- Navicula lyroides
- Navicula menisculus
- Navicula salinarum
- Neodenticula kamschatkica
- Neodenticula kozumii
- Neodenticula saminae
- Nitzschia challengerii
- Nitzschia jouseae
- Nitzschia palea
- Nitzschia reinholdii
- Nitzschia rolandii
- Odontella aurita
- Odontella spp.
- Paralia sulcata
- Paralia spp.
- Podosira stelligera
- Porosira glacialis
- Porosira glacialis
- Proboscia barboi
- Proboscia curvirostris
- Proboscia interposita
- Proboscia praebarboi
- Pseudodimmerogramma elegans
- Pseudonitzschia seriata
- Pseudopyxilla americana
- Pseudotriceratium radiosreticulatum
- Pyxidicula zabelinae

- R1 Rhaphoneis amphicerus
- Rhaphoneis spp.
- R3 Rhizosolenia hebetata f. hiemalis
- Rhizosolenia hebetata f. semispina
- Rhizosolenia norvegica
- Rhizosolenia praebregonii
- Rhizosolenia setigera
- Rhizosolenia spp.
- Roperia tessellata
- Rocella gelida
- Rocella praenitida
- Rocella semigelida
- Rocella vigilans
- Rouxia californica
- Rouxia granda
- Rouxia isopolica
- Rouxia naviculoides
- Rouxia obesa
- Shionodiscus oestrupii
- Shionodiscus praeoestrupii
- Shionodiscus trifolius
- Stephanopyxis dimorpha
- Stephanopyxis horridus
- Stephanopyxis lurreis
- Stephanopyxis spp.
- Surirella spp.
- Thalassionema bacillaris
- Thalassionema nitzschioides
- Thalassionema nitzschioides var. incurvatum
- Thalassionema nitzschioides var. inflatum
- Thalassionema nitzschioides var. parvum
- Thalassionema pseudonitzschioides
- Thalassionema schraderi
- Thalassionema spp.
- Thalassiosira antiqua
- Thalassiosira bioculata
- Thalassiosira castanea
- Thalassiosira convexa
- Thalassiosira decipiens
- Thalassiosira dubiosa
- Thalassiosira eccentrica
- Thalassiosira fasciculata
- Thalassiosira fraga
- Thalassiosira gravida
- Thalassiosira grunowii
- Thalassiosira hyalina
- Thalassiosira irregularata
- Thalassiosira jacksonii
- Thalassiosira jouseae
- Thalassiosira leptopus
- Thalassiosira lineata
- Thalassiosira lusca
- Thalassiosira manifesta
- Thalassiosira marujamca
- Thalassiosira mediaconvexa
- Thalassiosira minutissima
- Thalassiosira miocenicica
- Thalassiosira nordenskioldii
- Thalassiosira orientalis
- Thalassiosira praefraga
- Thalassiosira praenidulus
- Thalassiosira praeyabei
- Thalassiosira robusta
- Thalassiosira sancettae
- Thalassiosira singularis
- Thalassiosira temporel
- Thalassiosira umaeniensis
- Thalassiosira undulosa
- Thalassiosira yabei
- Thalassiosira spp.
- Thalassiothrix longissima
- Thalassiothrix spp.
- Trachyneis aspera
- Trachyneis spp.
- Yoshidaia divergens
- Yoshidaia spp.

Chaetoceros Resting Spores TOTAL of VEGETATIVE CELLS 39/100

closed Dinos silica sponge
5/13/21 13/39 164

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19E - 15H-2W, 100 cm

DATE: 2013/July/ 18

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION
G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:
M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopterychus senarius
Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenicata
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmidiscus insignis
Crucidentacula ikebei
Crucidentacula kanayae
Crucidentacula nicobarica
Crucidentacula paranicobarica
Crucidentacula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboenis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolotus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis pilocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsotetus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kantschatica
Neodenticula koizumii
Neodenticula saminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praearboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis lurreis
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschoides
Thalassionema nitzschoides var. *incurvatum*
Thalassionema nitzschoides var. *inflatum*
Thalassionema nitzschoides var. *parvum*
Thalassionema pseudonitzschoides
Thalassionema schraderei
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregularata
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamka
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenicata
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaeniensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

2 x 10^6 = 77% ...

Diatom zones (NPD)

NPD 12

Core, section, interval (cm)

U14 19E-15H-10

DATE: 2013/July

12

OBSERVER'S NAME AF SK IS

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica
- Achnanthes inflata
- Achnanthes lanceolata
- Achnanthes lineariformis
- Achnanthes spp.
- X Actinocyclus curvatus +
- Actinocyclus ellipticus
- Actinocyclus ingens
- Actinocyclus ingens f. nodus
- Actinocyclus ingens f. planus
- Actinocyclus ocellatus
- Actinocyclus ochotensis
- Actinocyclus octonarius
- Actinocyclus robustus
- Actinocyclus tsugaruensis
- Actinocyclus spp.
- Actinocyclus senarius
- Actinocyclus vulgaris
- R Actinocyclus spp. |
- Araniscus lewisianus
- Araniscus spp.
- Asteromphalus darwinii
- Asteromphalus oligocenicus
- Asteromphalus parvulus
- Asteromphalus robustus
- Asteromphalus spp.
- Azpeitia biradiata
- Azpeitia komurae
- Azpeitia nodulifera
- Azpeitia oligocenica
- Azpeitia praenodulifera
- Azpeitia salisburyana
- Azpeitia tabularis
- Azpeitia vetustissima
- Azpeitia spp.
- Bacterosira bathyomphala
- Bacterosira fragilis
- Bacterosira spp.
- Cavitatus exiguus
- Cavitatus jouseanus
- Cavitatus lanceolatus
- Cavitatus linearis
- Cavitatus miocenicus
- Cavitatus rectus
- Cavitatus spp.
- Cestodiscus kugleri
- Cestodiscus trochus
- Cestodiscus spp.
- Cocconeis californica
- Cocconeis costata
- R Cocconeis scutellum T2
- Cocconeis spp.
- Coscinodiscus asteromphalus
- Coscinodiscus marginatus
- Coscinodiscus oculus-iridis
- R Coscinodiscus radiatus |
- Coscinodiscus rhombicus
- Coscinodiscus symbolophorus
- Cosmodiscus insignis
- Crucidenticula ikebei
- Crucidenticula kanayae
- Crucidenticula nicobarica
- Crucidenticula paranicobarica
- Crucidenticula sawamurae
- Cyclotella striata
- Cyclotella meneghiniana
- Cyclotella spp.
- Cymbella cistula
- Cymbella minuta
- Cymbella subaequalis
- Cymbella spp.
- Delphineis angustata
- Delphineis ischaboensis
- Delphineis kippae
- Delphineis sachalinensis
- Delphineis simonsenii
- Delphineis surirella
- Delphineis spp.

- Denticulopsis crassa
- Denticulopsis dimorpha var. dimorpha
- Denticulopsis dimorpha var. areolata
- Denticulopsis hustedii
- Denticulopsis hyalina
- Denticulopsis katayamae
- Denticulopsis lauta
- Denticulopsis praedimorpha var. minor
- Denticulopsis praedimorpha var. praedimorpha
- Denticulopsis praehyalina
- Denticulopsis praekatayamae
- Denticulopsis praelauta
- Denticulopsis simonsenii
- Denticulopsis tanimurae
- Denticulopsis vulgaris
- Denticulopsis spp.
- Diploneis bombus
- Diploneis puella
- Diploneis smithii
- Diploneis suborbicularis
- Diploneis spp.
- Distephanosira architecturalis
- Distephanosira spp.
- Ellerbeckia sol
- Ellerbeckia spp.
- Eunotia pectinalis var. minor
- Eunotia praerupta var. praerupta
- Eunotia spp.
- Fragilaria construens
- Fragilaria spp.
- Fragilariopsis cylindrus
- Fragilariopsis dolotus
- Fragilariopsis fossilis
- Fragilariopsis oceanica
- Fragilariopsis pilocena
- Fragilariopsis spp.
- Goniothecium decoratum
- Goniothecium rogersii
- Goniothecium spp.
- Grammatophora spp.
- Halamphora costata
- R Hyalodiscus obsoletus T F 9
- R Hyalodiscus spp. T F 10
- R Ikebea tenuis T F 10
- Kisseleviella carina
- Kisseleviella ezoensis
- Kozumia tatsunokuchlensis
- Kozloviella minor
- Lisitzinia ornata
- Medlaria magna
- Medlaria splendida
- Melosira albicans
- Navicula elginensis
- Navicula lyroides
- Navicula menisculus
- Navicula salinarum
- Neodenticula kamtschatica
- Neodenticula kozumii
- Neodenticula seminiae
- F Nitzschia challengerii T F 4 7
- Nitzschia jouseae
- Nitzschia palea
- Nitzschia reinholdii
- Nitzschia rolandii
- Odontella aurita
- Odontella spp.
- Paralia sulcata
- Paralia spp.
- Podosira stelligera
- Porosira glacialis
- Proboscia barboi
- Proboscia curvirostris
- Proboscia interposita
- Proboscia praebarboi
- Pseudodimmerogramma elegans
- Pseudonitzschia seriata
- Pseudopyxilla americana
- Pseudotraceratium radiosoreticulatum
- Pyxidicula zabellinae

- R Rhaphoneis amphicerus
- R Rhaphoneis spp.
- R Rhizosolenia hebetata f. hiemalis T
- R Rhizosolenia hebetata f. semispina T
- R Rhizosolenia norvegica T
- R Rhizosolenia praeborgonii T
- R Rhizosolenia setigera T
- R Rhizosolenia spp.
- R Roperia tessellata T
- R Rocella gelida T
- R Rocella praenitida T
- R Rocella semigelida T
- R Rocella vigilans T
- R Rouxia californica T
- R Rouxia granda T
- R Rouxia isopolica T
- R Rouxia naviculoides T
- R Rouxia obesa T
- R Shionodiscus ostrupii T F 11
- R Shionodiscus praeostrupii T F 11
- R Shionodiscus trifultus T F 9
- R Stephanopyxis dimorpha T F 9
- R Stephanopyxis horridus T 2
- R Stephanopyxis turris T 2
- R Stephanopyxis spp. T 2
- R Surirella spp. T 2
- R Thalassionema bacillarum T F 5
- R Thalassionema nitzschioides T F 5
- R Thalassionema nitzschioides var. incurvatum T F 5
- X Thalassionema nitzschioides var. inflatum T
- R Thalassionema nitzschioides var. parvum T
- R Thalassionema pseudonitzschioides T
- R Thalassionema schraderi T
- R Thalassionema spp. T
- R Thalassiosira antiqua T
- R Thalassiosira bioculata T
- R Thalassiosira castanea T
- R Thalassiosira convexa T
- R Thalassiosira decipiens T
- R Thalassiosira dubiosa T
- R Thalassiosira eccentrica T F 9
- R Thalassiosira fasciculata T F 9
- R Thalassiosira fraga T
- R Thalassiosira gravida T 2
- R Thalassiosira grunowii T
- R Thalassiosira hyalina T
- R Thalassiosira irregularata T
- R Thalassiosira jacksonii T
- R Thalassiosira jouseae T
- R Thalassiosira leptopus T
- R Thalassiosira lineata T
- R Thalassiosira lusca T
- R Thalassiosira manifesta T
- R Thalassiosira marujamca T
- R Thalassiosira mediaconvexa T
- R Thalassiosira minutissima T
- R Thalassiosira miocenica T
- R Thalassiosira nordenskioldii T
- R Thalassiosira orientalis T
- R Thalassiosira praefraga T
- R Thalassiosira praenidulus T
- R Thalassiosira praeyabei T
- R Thalassiosira robusta T
- R Thalassiosira sancettae T
- R Thalassiosira singularis T
- R Thalassiosira temperi T
- R Thalassiosira umaeniensis T
- R Thalassiosira undulosa T
- R Thalassiosira yabei T
- R Thalassiosira spp. T F 9
- R Thalassiothrix longissima T
- R Thalassiothrix spp. T
- R Trachyneis aspera T
- R Trachyneis spp. T
- R Yoshidalia divergens T
- R Yoshidalia spp. T

Cheetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

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Diatom zones (NPD)

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TOTAL PRESERVATION
G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 *19E-174 in 130 cm*

TOTAL ABUNDANCE:
M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

全田 沢

DATE: 2013/July/ *15*

OBSERVER's NAME AF SK IS

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica*
- Achnanthes inflata*
- Achnanthes lanceolata*
- Achnanthes lineariformis*
- Achnanthes* spp.
- Actinocyclus curvatus*
- Actinocyclus ellipticus*
- Actinocyclus ingens***
- Actinocyclus ingens f. nodus***
- Actinocyclus ingens f. planus***
- Actinocyclus oculatus***
- Actinocyclus ochotensis*
- Actinocyclus octonarius*
- Actinocyclus robustus*
- Actinocyclus tsugaruensis*
- Actinocyclus* spp.
- Actinocyclus senarius*
- Actinocyclus vulgaris*
- Actinocyclus* spp.
- Araniscus lewisianus*
- Araniscus* spp.
- Asteromphalus darwinii*
- Asteromphalus oligocenicus*
- Asteromphalus parvulus*
- Asteromphalus robustus*
- Asteromphalus* spp.
- Azpeitia biradiata*
- Azpeitia komurae***
- Azpeitia nodulifera*
- Azpeitia oligocenic*
- Azpeitia praenodulifera*
- Azpeitia salisburyana*
- Azpeitia tabularis*
- Azpeitia vetustissima*
- Azpeitia* spp.
- Bacterosira bathyomphala*
- Bacterosira fragilis*
- Bacterosira* spp.
- Cavitatus exiguus*
- Cavitatus jouseanus***
- Cavitatus lanceolatus*
- Cavitatus linearis*
- Cavitatus miocenicus*
- Cavitatus rectus*
- Cavitatus* spp.
- Cestodiscus kugleri*
- Cestodiscus trochus*
- Cestodiscus* spp.
- Cocconeis californica*
- Cocconeis costata*
- Cocconeis scutellum*
- Cocconeis* spp.
- Coscinodiscus asteromphalus*
- Coscinodiscus marginatus*
- Coscinodiscus oculus-iridis*
- Coscinodiscus radiatus*
- Coscinodiscus rhombicus*
- Coscinodiscus symbolophorus*
- Cosmioliscus insignis***
- Crucidenticula ikebei*
- Crucidenticula kanayae*
- Crucidenticula nicobarica*
- Crucidenticula paranicobarica*
- Crucidenticula sawamurae*
- Cyclotella striata*
- Cyclotella meneghiniana*
- Cyclotella* spp.
- Cymbella cistula*
- Cymbella minuta*
- Cymbella subaequalis*
- Cymbella* spp.
- Delphineis angustata*
- Delphineis ischabensis*
- Delphineis kippae*
- Delphineis sachalinensis*
- Delphineis simonsenii***
- Delphineis sunirella*
- Delphineis* spp.

- Denticulopsis crassa***
- Denticulopsis dimorpha* var. *dimorpha***
- Denticulopsis dimorpha* var. *areolata***
- Denticulopsis huotodtii***
- Denticulopsis hyalina***
- Denticulopsis katayamae***
- Denticulopsis lauta***
- Denticulopsis praedimorpha* var. *minor***
- Denticulopsis praedimorpha* var. *praedimorpha***
- Denticulopsis praehyalina***
- Denticulopsis praekatayamae***
- Denticulopsis praelauta***
- Denticulopsis simonsenii***
- Denticulopsis tanimurae***
- Denticulopsis vulgaris***
- Denticulopsis* spp.
- Diploneis bombus*
- Diploneis puella*
- Diploneis smithii*
- Diploneis suborbicularis*
- Diploneis* spp.
- Distephanosira architecturalis*
- Distephanosira* spp.
- Ellerbeckia sol*
- Ellerbeckia* spp.
- Eunotia pectinalis* var. *minor*
- Eunotia praerupta* var. *praerupta*
- Eunotia* spp.
- Fragilaria construens*
- Fragilaria* spp.
- Fragilariopsis cylindrus*
- Fragilariopsis dolotus***
- Fragilariopsis fossilis***
- Fragilariopsis oceanica*
- Fragilariopsis pilocena***
- Fragilariopsis* spp.
- Goniothecium decoratum*
- Goniothecium rogersii*
- Goniothecium* spp.
- Grammatophora* spp.
- Halamphora costata*
- Hyalodiscus obsoletus*
- Hyalodiscus* spp.
- Ikebea tenuis***
- Kisseleviella carina*
- Kisseleviella ezoensis*
- Kozumia tatsunokuchiensis***
- Kozloviella minor*
- Lisitzinia ornata*
- Mediaria magna***
- Mediaria splendida***
- Melosira albicans*
- Navicula elginensis*
- Navicula lyroides*
- Navicula menisculus*
- Navicula salinarum*
- Neodenticula kamtschatica***
- Neodenticula kolzumii***
- Neodenticula seminae***
- Nitzschia challengerii*
- Nitzschia jouseae***
- Nitzschia palea*
- Nitzschia reinholdii***
- Nitzschia rolandii***
- Odontella aurita*
- Odontella* spp.
- Paralia sulcata*
- Paralia* spp.
- Podosira stelligera*
- Porosira glacialis*
- Proboscia barboi***
- Proboscia curvirostris***
- Proboscia interposita*
- Proboscia praebarboi*
- Pseudodimmerogramma elegans*
- Pseudonitzschia seriata*
- Pseudopyxilla americana*
- Pseudotriceratium radiosoreticulatum*
- Pyxidicula zabelinae***

- Rhaphoneis amphicerus*
- Rhaphoneis* spp.
- Rhizosolenia hebetata f. hiemalis*
- Rhizosolenia hebetata f. semispina*
- Rhizosolenia norvegica*
- Rhizosolenia praebergonii***
- Rhizosolenia setigera*
- Rhizosolenia* spp.
- Roperia tessellata*
- Rocella gelida*
- Rocella praenitida*
- Rocella semigelida*
- Rocella vigilans*
- Rouxia californica***
- Rouxia granda*
- Rouxia isopolica*
- Rouxia naviculoides*
- Rouxia obesa*
- Shionodiscus oestrupii***
- Shionodiscus praecoestrupii***
- Shionodiscus trifidulus*
- Stephanopyxis dimorpha*
- Stephanopyxis horridus***
- Stephanopyxis turris*
- Stephanopyxis* spp.
- Suirella* spp.
- Thalassionema bacillarum*
- Thalassionema nitzschioides*
- Thalassionema nitzschioides* var. *incurvatum*
- Thalassionema nitzschioides* var. *inflatum*
- Thalassionema nitzschioides* var. *parvum*
- Thalassionema pseudonitzschioides*
- Thalassionema schraderei***
- Thalassionema* spp.
- Thalassiosira antiqua***
- Thalassiosira bioculata*
- Thalassiosira castanea***
- Thalassiosira convexa***
- Thalassiosira decipiens*
- Thalassiosira dubiosa*
- Thalassiosira eccentrica*
- Thalassiosira fasciculata*
- Thalassiosira fraga*
- Thalassiosira gravida*
- Thalassiosira grunowii***
- Thalassiosira hyalina*
- Thalassiosira irregulara*
- Thalassiosira jacksonii***
- Thalassiosira jouseae***
- Thalassiosira leptopus*
- Thalassiosira lineata*
- Thalassiosira lusca*
- Thalassiosira manifesta*
- Thalassiosira marjamic***
- Thalassiosira mediaconvexa*
- Thalassiosira minutissima***
- Thalassiosira miocenic*
- Thalassiosira nordenskioldii*
- Thalassiosira orientalis*
- Thalassiosira praefraga*
- Thalassiosira praenidulus*
- Thalassiosira praeyabei*
- Thalassiosira robusta*
- Thalassiosira sancettae*
- Thalassiosira singularis***
- Thalassiosira temporei***
- Thalassiosira umaensis*
- Thalassiosira undulosa*
- Thalassiosira yabei***
- Thalassiosira* spp.
- Thalassiothrix longissima*
- Thalassiothrix* spp.
- Trachyneis aspera*
- Trachyneis* spp.
- Yoshidaia divergens*
- Yoshidaia* spp.

R2
R4
R3
R3

R2 ***Chaetoceros* Resting Spores**

TOTAL of VEGETATIVE CELLS

closed cop Dims

4.0

Diatom zones (NPD)

undet

TOTAL PRESERVATION
G (good), M (moderate), P (poor)

FRAGMENTS

Core, section, interval (cm)

U14 19E 17H-2W 15cm

TOTAL ABUNDANCE:
M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

全角凡例

DATE: 2013/July/ 15

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON
A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens* f. *nodus
Actinocyclus ingens* f. *planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseaui
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmidiscus insignis
Crucidenticula ikebei
Crucidenticula kanayae
Crucidenticula nicobarica
Crucidenticula paranicobarica
Crucidenticula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Denticulopsis crassa
Denticulopsis dimorpha* var. *dimorpha
Denticulopsis dimorpha* var. *areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha* var. *minor
Denticulopsis praedimorpha* var. *praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolotus
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocana
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kozumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kozumii
Neodenticula seminiae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmergramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosoreticulatum
Pyxidicula zabelinae

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis lurrus
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillarum
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marujamca
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskioldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenitidula
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

***Chaetoceros* Resting Spores**
TOTAL of VEGETATIVE CELLS

sponge

Diatom zones (NPD)

mdet

Core, section, interval (cm)

U14 19E 17H-2W, 40cm

DATE: 2013/July/ 15

OBSERVER's NAME AF SK IS

TOTAL PRESERVATION G (good), M (moderate), P (poor)

TOTAL ABUNDANCE M (>60%), A (20-60%), C (5-20%) F (2-5%), R (<2%), B (no diatoms)

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RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV) F (>1 vlv/10FOVs & <1 vlv/10FOVs) R (>3 vlv/traverse & <1 vlv/10FOVs) X (present), B (barren)

- Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatulus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens 1. nodus
Actinocyclus ingens 1. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus oclonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligogenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenica
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia velustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculus-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidenticula ikebei
Crucidenticula kanayae
Crucidenticula nicobarica
Crucidenticula paranicobarica
Crucidenticula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonseni
Delphineis surirella
Delphineis spp.

- Denticulopsis crassa
Denticulopsis dimorpha var. dimorpha
Denticulopsis dimorpha var. areolata
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. minor
Denticulopsis praedimorpha var. praedimorpha
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonseni
Denticulopsis tanimurae
Denticulopsis vulgaris
Denticulopsis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. minor
Eunotia praerupta var. praerupta
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolius
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plicocana
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikebea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Kolzumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula menisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula kolzumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barbol
Proboscia curvirostris
Proboscia interposita
Proboscia praeparbol
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotriceratium radiosreticulatum
Pyxidicula zabelinae

- Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata 1. hiemalis
Rhizosolenia hebetata 1. semispina
Rhizosolenia norwegica
Rhizosolenia praeborgonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praelinitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praesoestrupii
Shionodiscus trifolius
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. incurvatum
Thalassionema nitzschioides var. inflatum
Thalassionema nitzschioides var. parvum
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenica
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores
TOTAL of VEGETATIVE CELLS

R1
R1

R2 T

Sponge Rads Forams
Crypt

Diatom zones (NPD)

undet.

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19E-17H-2W-100cm

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

全図R

DATE: 2013/July/ 14

OBSERVER's NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

- Achnanthes groenlandica*
- Achnanthes inflata*
- Achnanthes lanceolata*
- Achnanthes lineariformis*
- Achnanthes* spp.
- Actinocyclus curvatus*
- Actinocyclus ellipticus*
- Actinocyclus ingens***
- Actinocyclus ingens* f. *nodus***
- Actinocyclus ingens* f. *planus***
- Actinocyclus oculatus***
- Actinocyclus ochotensis*
- Actinocyclus octonarius*
- Actinocyclus robustus*
- Actinocyclus tsugaruensis*
- Actinocyclus* spp.
- Actinopterychus senarius*
- Actinopterychus vulgaris*
- Actinopterychus* spp.
- Araniscus lewisianus*
- Araniscus* spp.
- Asteromphalus darwinii*
- Asteromphalus oligocenicus*
- Asteromphalus parvulus*
- Asteromphalus robustus*
- Asteromphalus* spp.
- Azpeitia biradiata*
- Azpeitia komurae***
- Azpeitia nodulifera*
- Azpeitia oligocenica*
- Azpeitia praenodulifera*
- Azpeitia salisburyana*
- Azpeitia tabularis*
- Azpeitia vetustissima*
- Azpeitia* spp.
- Bacterosira bathyomphala*
- Bacterosira fragilis*
- Bacterosira* spp.
- Cavitatus exiguus*
- Cavitatus jouseanus***
- Cavitatus lanceolatus*
- Cavitatus linearis*
- Cavitatus miocenicus*
- Cavitatus rectus*
- Cavitatus* spp.
- Cestodiscus kugleri*
- Cestodiscus trochus*
- Cestodiscus* spp.
- Cocconeis californica*
- Cocconeis costata*
- Cocconeis scutellum*
- Cocconeis* spp.
- Coscinodiscus asteromphalus*
- Coscinodiscus marginatus*
- Coscinodiscus oculus-iridis*
- Coscinodiscus radiatus*
- Coscinodiscus rhombicus*
- Coscinodiscus symbolophorus*
- Cosmodiscus insignis***
- Crucidenticula ikebei*
- Crucidenticula kanayae*
- Crucidenticula nicobarica*
- Crucidenticula paranicobarica*
- Crucidenticula sawamurae*
- Cyclotella striata*
- Cyclotella meneghiniana*
- Cyclotella* spp.
- Cymbella cistula*
- Cymbella minuta*
- Cymbella subaequalis*
- Cymbella* spp.
- Delphineis angustata*
- Delphineis ischabensis*
- Delphineis kippae*
- Delphineis sachalinensis*
- Delphineis simonsenii***
- Delphineis surirella*
- Delphineis* spp.

- Denticulopsis crassa***
- Denticulopsis dimorpha* var. *dimorpha***
- Denticulopsis dimorpha* var. *areolata***
- Denticulopsis hustedii***
- Denticulopsis hyalina***
- Denticulopsis katayamae***
- Denticulopsis lauta***
- Denticulopsis praedimorpha* var. *minor***
- Denticulopsis praedimorpha* var. *praedimorpha***
- Denticulopsis praehyalina***
- Denticulopsis praekatayamae***
- Denticulopsis praelauta***
- Denticulopsis simonsenii***
- Denticulopsis tanimurae***
- Denticulopsis vulgaris***
- Diploneis bombus*
- Diploneis puella*
- Diploneis smithii*
- Diploneis suborbicularis*
- Diploneis* spp.
- Distephanosira architecturalis*
- Distephanosira* spp.
- Ellerbeckia sol*
- Ellerbeckia* spp.
- Eunotia pectinalis* var. *minor*
- Eunotia praerupta* var. *praerupta*
- Eunotia* spp.
- Fragilaria construens*
- Fragilaria* spp.
- Fragilariopsis cylindrus*
- Fragilariopsis dolius***
- Fragilariopsis fossilis***
- Fragilariopsis oceanica*
- Fragilariopsis pilocena***
- Fragilariopsis* spp.
- Goniothecium decoratum*
- Goniothecium rogersii*
- Goniothecium* spp.
- Grammatophora* spp.
- Halamphora costata*
- Hyalodiscus obsoletus*
- Hyalodiscus* spp.
- Ikebea tenuis***
- Kisseleviella carina*
- Kisseleviella ezoensis*
- Kozumia tatsunokuchiensis***
- Kozioviella minor*
- Lisitzinia omata*
- Medlaria magna***
- Medlaria splendida***
- Melosira albicans*
- Navicula elginensis*
- Navicula lyroides*
- Navicula menisculus*
- Navicula salinarum*
- Neodenticula kamtschatica***
- Neodenticula kozumii***
- Neodenticula seminiae***
- Nitzschia challengerii*
- Nitzschia jouseae***
- Nitzschia palea*
- Nitzschia reinholdii***
- Nitzschia rolandii***
- Odontella aurita*
- Odontella* spp.
- Paralia sulcata*
- Paralia* spp.
- Podosira stelligera*
- Porosira glacialis*
- Proboscia barboi***
- Proboscia curvirostris***
- Proboscia interposita*
- Proboscia praebarboi*
- Pseudodimmerogramma elegans*
- Pseudonitzschia seriata*
- Pseudopyxilla americana*
- Pseudotriceratium radiosoreticulatum*
- Pyxidicula zabelinae***

- Rhaphoneis amphicerus*
- Rhaphoneis* spp.
- Rhizosolenia hebetata* f. *hiemalis*
- Rhizosolenia hebetata* f. *semispina*
- Rhizosolenia norvegica*
- Rhizosolenia praebergonii***
- Rhizosolenia setigera*
- Rhizosolenia* spp.
- Roperia tessellata*
- Rocella gelida*
- Rocella praenitida*
- Rocella semigelida*
- Rocella vigilans*
- Rouxia californica***
- Rouxia granda*
- Rouxia isopolica*
- Rouxia naviculoides*
- Rouxia obesa*
- Shionodiscus oestrupii***
- Shionodiscus praeoestrupii***
- Shionodiscus trifidulus*
- Stephanopyxis dimorpha*
- Stephanopyxis horridus***
- Stephanopyxis turris*
- Stephanopyxis* spp.
- Surirella* spp.
- Thalassionema bacillaris*
- Thalassionema nitzschioides*
- Thalassionema nitzschioides* var. *incurvatum*
- Thalassionema nitzschioides* var. *inflatum*
- Thalassionema nitzschioides* var. *parvum*
- Thalassionema pseudonitzschioides*
- Thalassionema schradri***
- Thalassionema* spp.
- Thalassiosira antiqua***
- Thalassiosira bioculata*
- Thalassiosira castanea***
- Thalassiosira convexa***
- Thalassiosira decipiens*
- Thalassiosira dubiosa*
- Thalassiosira eccentrica*
- Thalassiosira fasciculata*
- Thalassiosira fraga*
- Thalassiosira gravida*
- Thalassiosira grunowii***
- Thalassiosira hyalina*
- Thalassiosira irregularis*
- Thalassiosira jacksonii***
- Thalassiosira jouseae***
- Thalassiosira leptopus*
- Thalassiosira lineata*
- Thalassiosira lusca*
- Thalassiosira manifesta*
- Thalassiosira marjameica***
- Thalassiosira mediaconvexa*
- Thalassiosira minutissima***
- Thalassiosira miocenicica*
- Thalassiosira nordenskioldii*
- Thalassiosira orientalis*
- Thalassiosira praefraga*
- Thalassiosira praenidulus*
- Thalassiosira praeyabei*
- Thalassiosira robusta*
- Thalassiosira sancettae*
- Thalassiosira singularis***
- Thalassiosira temperi***
- Thalassiosira umaensis*
- Thalassiosira undulosa*
- Thalassiosira yabei***
- Thalassiosira* spp.
- Thalassiothrix longissima*
- Thalassiothrix* spp.
- Trachyneis aspera*
- Trachyneis* spp.
- Yoshidaia divergens*
- Yoshidaia* spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

Sponge

Diatom zones (NPD)

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens f. nodus
Actinocyclus ingens f. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinopterychus senarius
Actinopterychus vulgaris
Actinopterychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwini
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiala
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenic
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
Bacterosira spp.
Cavitatus exiguus
Cavitatus jouseanus
Cavitatus lanceolatus
Cavitatus linearis
Cavitatus miocenicus
Cavitatus rectus
Cavitatus spp.
Cestodiscus kugleri
Cestodiscus trochus
Cestodiscus spp.
Cocconeis californica
Cocconeis costata
Cocconeis scutellum
Cocconeis spp.
Coscinodiscus asteromphalus
Coscinodiscus marginatus
Coscinodiscus oculis-iridis
Coscinodiscus radiatus
Coscinodiscus rhombicus
Coscinodiscus symbolophorus
Cosmodiscus insignis
Crucidentricula ikebei
Crucidentricula kanayae
Crucidentricula nicobarica
Crucidentricula paranticobarica
Crucidentricula sawamurae
Cyclotella striata
Cyclotella meneghiniana
Cyclotella spp.
Cymbella cistula
Cymbella minuta
Cymbella subaequalis
Cymbella spp.
Delphineis angustata
Delphineis ischaboensis
Delphineis kippae
Delphineis sachalinensis
Delphineis simonsenii
Delphineis surirella
Delphineis spp.

Core, section, interval (cm)

U14 19E-17H-CC

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

Denticulopsis crassa
Denticulopsis dimorpha var. *dimorpha*
Denticulopsis dimorpha var. *areolata*
Denticulopsis hustedii
Denticulopsis hyalina
Denticulopsis katayamae
Denticulopsis lauta
Denticulopsis praedimorpha var. *minor*
Denticulopsis praedimorpha var. *praedimorpha*
Denticulopsis praehyalina
Denticulopsis praekatayamae
Denticulopsis praelauta
Denticulopsis simonsenii
Denticulopsis tanimurae
Denticulopsis vulgaris
Diploneis spp.
Diploneis bombus
Diploneis puella
Diploneis smithii
Diploneis suborbicularis
Diploneis spp.
Distephanosira architecturalis
Distephanosira spp.
Ellerbeckia sol
Ellerbeckia spp.
Eunotia pectinalis var. *minor*
Eunotia praerupta var. *praerupta*
Eunotia spp.
Fragilaria construens
Fragilaria spp.
Fragilariopsis cylindrus
Fragilariopsis dolioles
Fragilariopsis fossilis
Fragilariopsis oceanica
Fragilariopsis plocena
Fragilariopsis spp.
Goniothecium decoratum
Goniothecium rogersii
Goniothecium spp.
Grammatophora spp.
Halamphora costata
Hyalodiscus obsoletus
Hyalodiscus spp.
Ikobea tenuis
Kisseleviella carina
Kisseleviella ezoensis
Koizumia tatsunokuchiensis
Kozloviella minor
Lisitzinia ornata
Mediaria magna
Mediaria splendida
Melosira albicans
Navicula elginensis
Navicula lyroides
Navicula mentisculus
Navicula salinarum
Neodenticula kamtschatica
Neodenticula koizumii
Neodenticula seminae
Nitzschia challengerii
Nitzschia jouseae
Nitzschia palea
Nitzschia reinholdii
Nitzschia rolandii
Odontella aurita
Odontella spp.
Paralia sulcata
Paralia spp.
Podosira stelligera
Porosira glacialis
Proboscia barboi
Proboscia curvirostris
Proboscia interposita
Proboscia praebarboi
Pseudodimmerogramma elegans
Pseudonitzschia seriata
Pseudopyxilla americana
Pseudotraceratium radiosoreticulatum
Pyxidicula zabelinae

DATE: 2013/July/13

OBSERVER'S NAME AF SK IS

RELATIVE ABUNDANCE of EACH TAXON

A (>10 valves/FOV), C (1-10 vlv/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Rhaphoneis amphicerus
Rhaphoneis spp.
Rhizosolenia hebetata f. *hiemalis*
Rhizosolenia hebetata f. *semispina*
Rhizosolenia norvegica
Rhizosolenia praebergonii
Rhizosolenia setigera
Rhizosolenia spp.
Roperia tessellata
Rocella gelida
Rocella praenitida
Rocella semigelida
Rocella vigilans
Rouxia californica
Rouxia granda
Rouxia isopolica
Rouxia naviculoides
Rouxia obesa
Shionodiscus oestrupii
Shionodiscus praecoestrupii
Shionodiscus trifultus
Stephanopyxis dimorpha
Stephanopyxis horridus
Stephanopyxis turris
Stephanopyxis spp.
Surirella spp.
Thalassionema bacillaris
Thalassionema nitzschioides
Thalassionema nitzschioides var. *incurvatum*
Thalassionema nitzschioides var. *inflatum*
Thalassionema nitzschioides var. *parvum*
Thalassionema pseudonitzschioides
Thalassionema schraderi
Thalassionema spp.
Thalassiosira antiqua
Thalassiosira bioculata
Thalassiosira castanea
Thalassiosira convexa
Thalassiosira decipiens
Thalassiosira dubiosa
Thalassiosira eccentrica
Thalassiosira fasciculata
Thalassiosira fraga
Thalassiosira gravida
Thalassiosira grunowii
Thalassiosira hyalina
Thalassiosira irregulara
Thalassiosira jacksonii
Thalassiosira jouseae
Thalassiosira leptopus
Thalassiosira lineata
Thalassiosira lusca
Thalassiosira manifesta
Thalassiosira marjameica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenic
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperi
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
Thalassiothrix longissima
Thalassiothrix spp.
Trachyneis aspera
Trachyneis spp.
Yoshidaia divergens
Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS

Diatom zones (NPD)

B

TOTAL PRESERVATION

G (good), M (moderate), P (poor)

Core, section, interval (cm)

U14 19E-19H-CC

TOTAL ABUNDANCE:

M (>60%), A (20-60%), C (5-20%)
F (2-5%), R (<2%), B (no diatoms)

DATE: 2013/July/ 13

OBSERVER'S NAME (AF) SK IS

RELATIVE ABUNDANCE OF EACH TAXON

A (>10 valves/FOV), C (1-10 vlvs/FOV)
F (>1 vlv/10FOVs & <1 vlv/10FOVs)
R (>3 vlv/traverse & <1 vlv/10FOVs)
X (present), B (barren)

Achnanthes groenlandica
Achnanthes inflata
Achnanthes lanceolata
Achnanthes lineariformis
Achnanthes spp.
Actinocyclus curvatus
Actinocyclus ellipticus
Actinocyclus ingens
Actinocyclus ingens 1. nodus
Actinocyclus ingens 1. planus
Actinocyclus oculatus
Actinocyclus ochotensis
Actinocyclus octonarius
Actinocyclus robustus
Actinocyclus tsugaruensis
Actinocyclus spp.
Actinoptychus senarius
Actinoptychus vulgaris
Actinoptychus spp.
Araniscus lewisianus
Araniscus spp.
Asteromphalus darwinii
Asteromphalus oligocenicus
Asteromphalus parvulus
Asteromphalus robustus
Asteromphalus spp.
Azpeitia biradiata
Azpeitia komurae
Azpeitia nodulifera
Azpeitia oligocenic
Azpeitia praenodulifera
Azpeitia salisburyana
Azpeitia tabularis
Azpeitia vetustissima
Azpeitia spp.
Bacterosira bathyomphala
Bacterosira fragilis
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Cavitatus rectus
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Cymbella spp.
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Denticulopsis praedimorpha* var. *praedimorpha
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Denticulopsis praelauta
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Fragilariopsis fossilis
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Kozloviella minor
Lisitzinia ornata
Medlaria magna
Medlaria splendida
Melosira albicans
Navicula elginensis
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Thalassiosira manifesta
Thalassiosira marujamica
Thalassiosira mediaconvexa
Thalassiosira minutissima
Thalassiosira miocenic
Thalassiosira nordenskiöldii
Thalassiosira orientalis
Thalassiosira praefraga
Thalassiosira praenidulus
Thalassiosira praeyabei
Thalassiosira robusta
Thalassiosira sancettae
Thalassiosira singularis
Thalassiosira temperei
Thalassiosira umaensis
Thalassiosira undulosa
Thalassiosira yabei
Thalassiosira spp.
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Yoshidaia spp.

Chaetoceros Resting Spores

TOTAL of VEGETATIVE CELLS